AUSTRALIAN ARMY

LAND WARFARE PROCEDURES - GENERAL

LWP-G 3-9-6

OPERATIONS IN URBAN ENVIRONMENTS

DEVELOPING DOCTRINE

This publication supersedes *Land Warfare Procedures - General 3-9-6, Urban Operations, Tactics, Techniques and Procedures (Developing Doctrine)*, 2005.

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AMENDMENT LIST NUMBER 1

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Issued by command of Chief of Army

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Commandant
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PREFACE

This publication supersedes *Land Warfare Procedures - General 3-9-6, Urban Operations, Tactics, Techniques and Procedures (Developing Doctrine),* 2005.

1. *Land Warfare Doctrine 1, The Fundamentals of Land Warfare* identifies the contemporary operating environment as complex, diverse, diffuse and highly lethal. In this environment, land forces will be required to undertake an extremely wide range of tasks simultaneously within the same geographical area, at short notice and in complex, urbanised terrain.

2. To operate in this environment, land forces must be versatile, agile and able to orchestrate effects in a precise and discriminating fashion. This demands modular, highly educated and skilled forces with a capacity for network-enabled operations, optimised for close combat in combined arms teams.

3. These teams will be small, semi-autonomous and highly networked, incorporating traditional elements of the combined arms team as well as non-traditional elements such as civil affairs, intelligence and psychological warfare capabilities. They will have a capacity for protracted independent operations within a joint interagency framework.

Aim

4. This aim of this publication is to lay down the fundamentals, tactics, techniques and procedures for all soldiers conducting operations in urban environments. It also details specialised tactics, techniques and procedures needed to operate in urban environments.

Level

5. This publication provides all corps procedural level doctrine and is the principal reference for operations in urban environments at combat team level and below. It complements

Land Warfare Doctrine 3-0, Operations and *Land Warfare Doctrine 3-0-3, Land Tactics*.

6. This publication is written for all ranks at all levels operating in urban environments. It provides guidance on the basic planning and execution of tactical missions in urban environments.

Scope

7. This publication describes how the Australian Army operates in urban environments. It describes the effects that urban environments with civilian populations have on tactical actions by combined arms teams. The scope of this publication includes:

a. the Australian Army concept for operating in urban environments;

b. a description of the urban environment(s);

c. all corps urban combat skills; and

d. advanced urban combat skills.

Associated Publications

8. This publication should be read in conjunction with other publications and documents, in particular:

a. *Land Warfare Doctrine 1, The Fundamentals of Land Warfare*;

b. *Land Warfare Doctrine 3-0, Operations*;

c. *Land Warfare Doctrine 3-0-3, Land Tactics*;

d. *Land Warfare Procedures - Combat Arms (Dismounted Combat) 3-3-8, Patrolling*;

e. *Land Warfare Procedures - Combat Arms (Engineers) 4-3-2, Blast and Ballistic Effects*;

f. *Land Warfare Procedures - Combat Arms (Mounted Combat) 3-3-1, Mounted Minor Tactics*;

g. *Land Warfare Procedures - General 0-1-7, Internment and Detention*;

h. *Land Warfare Procedures - General 3-6-3, Basic Military Engineering*;

i. *Land Warfare Procedures - General 3-6-4, Physical Force Protection*;

j. *Land Warfare Procedures - General 3-6-5, Mines, Booby Traps and Improvised Explosive Devices*;

k. *Land Warfare Procedures - General 3-6-6, Demolitions*;

l. *Land Warfare Procedures - General 3-8-2, Population Protection and Control Techniques (Restricted Access)*; and

m. *Land Warfare Procedures - General 7-7-1, All Corps Individual Soldier Skills*.

Authority

9. *Land Warfare Procedures - General 3-9-6, Operations in Urban Environments* is released as a document for further analysis, validation and comment by selected organisations. This publication is authorised under signature by the Commandant Combined Arms Training Centre. Doctrine users should be aware of the following characteristics for this publication:

a. This publication will retain the number and title when produced as endorsed doctrine in 2009.

b. This publication has been clearly marked as 'Developing Doctrine' for the purpose of review and validation by selected organisations for the purpose of validating and final production in 2009. Army-wide distribution will not occur until the endorsed publication has been produced.

c. This publication has been released for a limited life span up to and including June 2009, to a specific audience, for a specific task, and will be reviewed by the doctrine project manager and sponsor at the end of that period based on user feedback.

d. Comments must be submitted to the sponsor and Army Knowledge Group Doctrine Wing no later than April 2009 in order to inform the development of the fully endorsed publication.

e. This publication may be used as a teaching reference, but instructors and students must be cognisant of current endorsed doctrine in that area. This particularly applies to safety or weapon-related guidance.

10. The sponsor for this publication is Commandant Combined Arms Training Centre.

On-line Doctrine

11. This and other doctrine publications are available via the Doctrine Online website located at: intranet.defence.gov.au/armyweb/sites/Doctrine-Online. Paper copies may be out of date. Doctrine Online is the authoritative source for current doctrine. Users are to ensure currency of all doctrine publications against the Doctrine Online library.

Gender

12. This publication has been prepared with gender-neutral language.

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GLOSSARY

1. The principal source for Australian Defence Force terms and definitions is the Australian Defence Glossary located at http://adg.eas.defence.mil.au/adgms. Terms and definitions contained within a publication are to be in accordance with the business rules, guidelines and conventions for the Australian Defence Glossary. All terms and definitions not sourced from the Australian Defence Glossary are to be justified by the author, recommended by the Sponsor and forwarded to the Manager of the Land Glossary for subsequent approval. This process also includes terms already contained in the Australian Defence Glossary but which for the purposes of a publication require a different definition.

close quarter battle
Techniques and procedures using armed force, to engage a target in confined areas, usually at range less than 25 metres.

consolidation
Organising and strengthening a newly captured position so that it can be used against the enemy.

covering force

1. A force operating apart from the main force for the purpose of intercepting, engaging, delaying, disorganising, and deceiving the enemy before they can attack the force covered.
2. Any body or detachment of troops which provides security for a larger force by observation, reconnaissance, attack, or defence, or by any combination of these methods.

dead space

1. An area within the maximum range of a weapon, radar, or observer, which cannot be covered by fire or observation from a particular position because of

intervening obstacles, the nature of the ground, or the characteristics of the trajectory, or the limitations of the capabilities of the weapon.

2. The volume of space above and around a gun or guided missile system into which it cannot fire because of mechanical or electronic limitations.

3. An area or zone which is within range of a radio transmitter, but in which a signal is not received.

detainee
A term used to refer to any person captured or otherwise detained by an armed force.

entry point
A pre-defined point secured by the foothold force for the clearance force.

foothold
The area where the assaulting force first breaks in.

overwatch
A tactical task in which the commander positions one element (the overwatching element) to support by fire the movement of another element. The overwatch element observes known or suspected enemy locations and engages the enemy if the enemy is visible or attempts to fire on the friendly element.

prisoner of war
A detained person as defined in Articles 4 and 5 of the Geneva Convention Relative to the Treatment of Prisoners of War of August 12, 1949. In particular, one who, while engaged in combat under orders of his or her government, is captured by the armed forces of the enemy. As such, he or she is entitled to the combatant's privilege of immunity from the municipal law of the capturing state for warlike acts which do not amount to breaches of the law of armed conflict. For example, a prisoner of war may be, but is not limited to, any person belonging to one of the following categories who has fallen into the power of the

enemy: a member of the armed forces, organised militia or volunteer corps; a person who accompanies the armed forces without actually being a member thereof; a member of a merchant marine or civilian aircraft crew not qualifying for more favourable treatment; or individuals who, on the approach of the enemy, spontaneously take up arms to resist the invading forces.

urban penetration
A technique used by a penetration force to rapidly secure and/or defend objectives such as, vital ground or key capability or the destruction or capture of the enemy without detailed clearance of immediate objectives.

urban sweep
An offensive technique used on a broad frontage in which a secure and/or cordoned urban area is systematically cleared by a specially task-organised force. Note: This technique is normally used against a greatly inferior force or when mopping up.

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ABBREVIATIONS

1. The principal source for Australian Defence Force abbreviations is the Australian Defence Glossary located at http://adg.eas.defence.mil.au/adgms. Ranks, staff appointments, corps, units, commonly used measurements, publication titles and commonly used terms are used in their abbreviated format throughout the publication.

AD	air defence
AFV	armoured fighting vehicle
CAAT	combined anti-armour team
CAS	close air support
CASEVAC	casualty evacuation
CBRN	chemical, biological, radiological and nuclear
CPERS	captured person
CT	combat team
EA	engagement area
FE	force element
FF	fatal funnel
FLOT	forward line of own troops
FOO	forward observation officer
FPF	final protective fire
FSP	fire support and protection
FT	fire team
FUP	forming-up point
GSMG	general support machine gun
HE	high explosive
IA	immediate action
IBT	initiative based tactics
ICPC	initial collection and processing centre
IR	infra-red
IT	immediate threat
KPP	key point protection
LDSFW	light direct fire support weapon
LOS	line of sight
MOUT	military operations in urban terrain
MP	military police

NGO	non-government organisation
NVG	night vision goggles
OHP	overhead protection
OP	observation post
PLCE	personal load carrying equipment
POC	point of capture
POE	point of entry
POW	prisoner of war
ROE	rules of engagement
RZ	red zone
SAF	small arms fire
SBF	support by fire
SOP	standard operating procedure
TQ	tactical questioning
TTP	tactics, techniques and procedures
UAV	unmanned aerial vehicle
UFC	use of force continuum
UO	urban operation
USMC	United States Marine Corps
VAP	vital asset protection
VBIED	vehicle-borne improvised explosive device

2. The following abbreviations appear in tables and figures within this publication.

AA	area of action
alt	alternate
ARH	armed reconnaissance helicopter
bldg	building
BP	battle position
BPT	be prepared to
CCA	close-combat attack
CCP	casualty collection point
CFF	cover from fire
CFV	cover from view
CHQ	company headquarters
CP	checkpoint
DCP	detainee checkpoint
EDD	explosive detection dog

EOD	explosive ordnance disposal
FOB	forward operating base
HESH	high-explosive squash head
HUMINT	human intelligence
IED	improvised explosive device
Inf	Infantry
Jav	Javelin
MG	machine gun
NAI	named area of interest
obj	objective
PDF	principle direction of fire
rte	route
SFMG	sustained fire machine gun
TRP	target reference point
UXO	unexploded explosive ordnance

3. The following are common shortened forms or symbols for names of measurements which will be used throughout this publication.

°	degree
cm	centimetre
km	kilmoetre
km/h	kilometres per hour
L	litre
lb	pound
m	metre
mm	millimetre
v	volt

4. The following are common shortened forms or symbols for names of chemicals which will be used throughout this publication.

WP	white phosphorous

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CHAPTER 1

URBAN ENVIRONMENTS

SECTION 1-1. INTRODUCTION

1.1 Understanding the terrain is the first important step in the ability to conduct urban operations (UO). The urban environment is complex and consists of three interrelated terrains: the physical, human and information terrains. Understanding these terrains will enable soldiers of all corps operating in urban environments to apply sound judgment and actions, as well as help them to better understand the importance of adopting tactics, techniques and procedures (TTP) to operate in the urban environment.

Aim

1.2 This chapter covers urbanisation and its effect on operations, engagement areas (EA), weapon effects in the urban environment and C2. Annex A contains a case study on Fallujah written by several US Marines. The case study is combined with a post-operational report. It provides an insight into many of the tasks required at platoon and section level when conducting operations in urban environments and reinforces much of the doctrine contained in this publication.

Interrelated Urban Terrains

1.3 **Complex Physical Terrain.** The physical terrain in the urban environment has been described as follows:

> *Complex terrain, in the physical sense, is any terrain where a force's weapon range exceeds its sensor range – in other words, troops cannot achieve unobstructed situational awareness to the maximum effective range of their weapons. Urban environments present a volume to ground forces, whereas other terrains present an area. While jungle poses significant line-of-sight problems, it still presents a single*

manoeuvre surface. More than 75% of the world's population lives in areas of complex physical terrain.[1]

The density of differing structures within the urban environment, together with the multitude of potential firing positions from streets, roofs, windows and doors gives rise to highly complex visibility characteristics that can change enormously within the space of a few metres.[2]

1.4 Complex Human Terrain. The human terrain in the urban environment has been described as follows:

Complex human terrain is where numerous population groups coexist in the same physical space – often a city or other urbanised area. These might include ethno-linguistic groups, political factions, tribes or clans, religious sects, or ideological movements. These groups may coexist peacefully, ignore each other, or compete (with or without violence). When military forces operate in this terrain, distinguishing between population groups is extremely difficult and requires sophisticated cultural and linguistic understanding.[3]

1.5 Complex Informational Terrain. The informational terrain in the urban environment has been described as follows:

Complex informational terrain arises when multiple sources or transmission paths for communications, data or information (including news media) exist in an operating environment. Normally, a military force operating in such an environment will be unable to control information flow in its area of operations.[4]

1. *Complex Warfighting, Future Land Operational Concept,* Edition 2, June 2005, p. 11.
2. Stephens, A. K. W., Connell, R. B. and Davies, P. J., *Urban Intelligence Preparation of the Battlespace Methods for Determining Natural Danger Zones in the Urban Environment*, DSTO-TR-1541.
3. *Complex Warfighting, Future Land Operational Concept,* Edition 2, June 2005, p. 11.
4. ibid.

SECTION 1-2. URBANISATION

1.6 Increasing expansion of urban areas is a feature of the modern world. Four hundred cities worldwide will soon have a population of more than 1 million people.[5] As this trend continues, there will be an associated increase in the probability that military operations will occur in urbanised areas. This has been demonstrated in numerous recent conflicts.

1.7 This level of urbanisation within a potential operating environment will have a marked effect on the conduct of operations. Consideration must be given to a number of factors that will determine the various methods of conduct. This section describes the following:

a. threats,

b. classification of urban environments,

c. the effects of urban terrain on operations, and

d. aspects of subterranean systems.

Threats

1.8 **Adversaries.** While no specific military threat to Australian interests has been identified, analysis of emerging potential threats, particularly in the immediate strategic neighbourhood, provides an insight into the nature and broad characteristics of threats likely to be faced within the Objective Force time frame. The most probable threat scenario that ground forces will face in the region is likely to have been precipitated by some form of intrastate conflict involving multiple parties and will comprise a mixture of traditional and non-traditional threats.

5. Whereas 30 per cent of the world population lived in urban areas in 1950, the proportion of urban-dwellers rose to 49 per cent by 2005 and half the world population is expected to live in urban areas by 2007. The world's proportion of urban population is projected to reach 61 per cent in 2030. Further information can be found in United Nations, *Population Challenges and Development Goals,* 2005.

1.9 The complex urban environment can be exploited by adversaries attempting to neutralise the technological advantage of modern armies. As modern western military forces become increasingly capable in simple or open terrain, likely future adversaries are recognising that their ability to successfully engage in open warfare is very limited. Accordingly, they are more routinely selecting the clutter of urban environments in which to conduct their missions.

1.10 **Hazards.** A typical urban environment has a number of potential hazards that do not relate specifically to enemy action but may cause significant casualties among units operating within an urban terrain. These can be categorised as collapses, fire, toxic substances, lack of structural stability and dangerous forces. In addition to extant force protection measures, the following hazards must be considered:

a. *Industrial Hazards.* These include but are not limited to toxic chemicals, gases and material, such as asbestos.

b. *Dangerous Forces.* These may include:

(1) nuclear reactors and radioactive sites (eg, medical and security screening x-ray facilities);

(2) water storage areas, such as dams and subterranean reticulation;

(3) power plants and bulk storage infrastructure such as natural gas; and

(4) oil/petroleum storage and distribution systems.

c. *Fragmentation, Rubble, Abrasives, Airborne Particles, Glass and Steel.* A typical urban environment will contain a wide variety of materials that can seriously injure troops in the course of routine or combatant duties.

d. *Sewage Storage and Distribution Systems.* Regardless of damage to infrastructure, the likelihood of disease outbreaks occurring following the breakdown of these systems is real and must be addressed in both the

procedural and physical force protection measures employed by a unit operating in urban terrain.

e. *Disease Vectors.* A wide variety of vectors exist within urban environments. These might include dead bodies, vermin, animals such as dogs, and insects.

f. *Damaged Buildings and Infrastructure.* Many buildings in urban areas may have been damaged or booby-trapped by enemy forces as a result of combat or during withdrawal. Awareness of a building's structural stability is important for force protection.

g. *Mines, Booby Traps and Obstacles.* Mines and booby traps are designed to prevent movement by personnel, to separate infantry from tanks, to inflict debilitating injuries and to slow or stop vehicles. Antipersonnel mines in particular impart significant psychological effects. Obstacles that hinder freedom of movement by vehicles and personnel are placed along approaches in order to channel forces into a desired area.

Classification of Urban Environments

1.11 The physical layout and subdivisions of the urban area are expressed as follows:

a. *Airspace.* The airspace around urban areas will greatly affect the ability of air power to operate to its full potential. Deep urban canyons requiring close approach, along with numerous positions that man-portable air defence can hide, make operating in an urban area dangerous to aircraft. Large quantities of glass may refract target designators, making target identification at 300 km/h difficult.

b. *Super-surface.* Super-surface domination of the surface and lower exterior is almost complete; however, in some places, due to the 'canyoning' effect, there may be significant blind spots, and any position here will be more easily detected and vulnerable.

c. *Interior.* Depending on the construction used, manoeuvre through buildings will be slow at best but should not be overlooked. Moving through buildings will provide much better protection for forces. The ability to move through will be dependent on the mission, time and rules of engagement (ROE).

d. *Surface.* Street-level manoeuvre will be much faster than moving through buildings, but forces will be more vulnerable.

e. *Sub-surface.* Where possible, sub-surface movement provides speed and protection, but the enemy will also be aware of this.

1.12 Electronic Warfare. Electronic warfare will be restricted in its effect due to the number of other transmitters that may be present in a modern city.

1.13 Zones. The urban environment (see Figure 1–1) is classified into the following zones:

a. the city core,

b. the core periphery,

c. commercial ribbons,

d. residential sprawl,

e. industrial areas,

f. outlying high-rise areas, and

g. shanty towns.

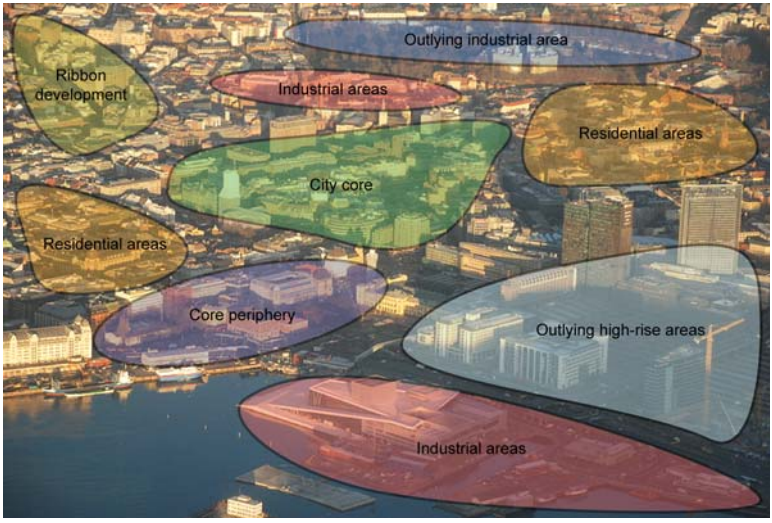


Figure 1–1: Urban Zones

1.14 City Core. The city core (see Figure 1–2), is the heart of the urban area: the downtown or central business district. It is relatively small and compact but contains a larger percentage of the urban area's shops, offices and public institutions. Many of the culturally and strategically important sites are located in this area. It normally contains the highest density of multistorey buildings and subterranean areas. In most cities, the core has undergone more recent development than the core periphery. As a result, the two regions are often quite different. Typical city cores are made up of buildings that vary greatly in height and construction methods. The effects are as follows:

a. *Observation and Fields of Fire.* There is a short line of sight (LOS) except along some arterial streets. Some lanes and alleyways are highly restrictive to vehicle movement; high elevation is a threat to armour; and the direct weapons range is very limited, and indirect fire very restricted except at the edges.

b. *Cover and Concealment.* There is an abundance of cover and concealment, and explosive munitions produce a significant secondary fragmentation hazard from the large expanses of glass.

c. *Obstacles.* Rubble and disabled vehicles may quickly render the surface impassable to all but infantry if indirect fire is used to any extent. A very high fire risk exists. The dense population is a major obstacle, C2 is difficult and major disruptions to communications can be expected.

d. *Key Terrain.* The key terrain generally consists of the buildings dominating the avenues of approach and the important buildings of function, cultural, social, political, religious and economic significance. Telephone exchanges and communication and media centres may also be key terrain. As most cities are built on or near rivers, bridges may also become key terrain.

e. *Avenues of Approach.* Air approach is difficult due to height variations and canyoning, making air frames vulnerable to air defence (AD) weapons or direct fire weapons located in elevated positions. There are few landing points except for some building tops. Road systems are expected to be good and the subterranean network is probably extensive.

Figure 1–2: City Core

1.15 Core Periphery. The core periphery is located at the edges of the city core. The core periphery consists of streets 12 to 20 m wide with continuous fronts of brick or concrete buildings. The building heights are fairly uniform in the core periphery. In moderate cities they are two or three storeys high, and in large cities they are five to 10 storeys high. Dense random and close orderly blocks are two common construction patterns that can be found within the city core and core periphery zones. The effects are as follows:

a. *Observation and Fields of Fire.* Good observation and fields of fire can be expected along main roads and some secondary roads. The observation of air approaches is better than in the core.

b. *Cover and Concealment.* Force elements (FE) are exposed on main roads, particularly if buildings are up to the street's edge, except at gable-end buildings.

c. *Obstacles.* Side roads and easily blocked main roads should be considered obstacles that require significant effort and vehicle resources.

d. *Key Terrain.* Buildings (which cover the main approaches and intersections) and bridges are generally key terrain. Other key terrain may include food, power and water distribution points, and large open areas such as parks or sports grounds if airmobile operations are to be conducted.

e. *Avenues of Approach.* Air approach is better due to the reduced building height making airframes less vulnerable than in the city core. Good road systems can be expected to move volumes of people into and out of the core periphery, and the subterranean network is probably still extensive.

1.16 Commercial Ribbons. These are composed of rows of retail stores, offices and restaurants that are built along both sides of major streets through built-up areas (see Figure 1–3). Typically, such streets are 25 m wide or more. The buildings in the outer areas are uniformly two to three storeys tall, usually

about one storey taller than the dwellings on the streets behind them. The effects are the same as for the core periphery.

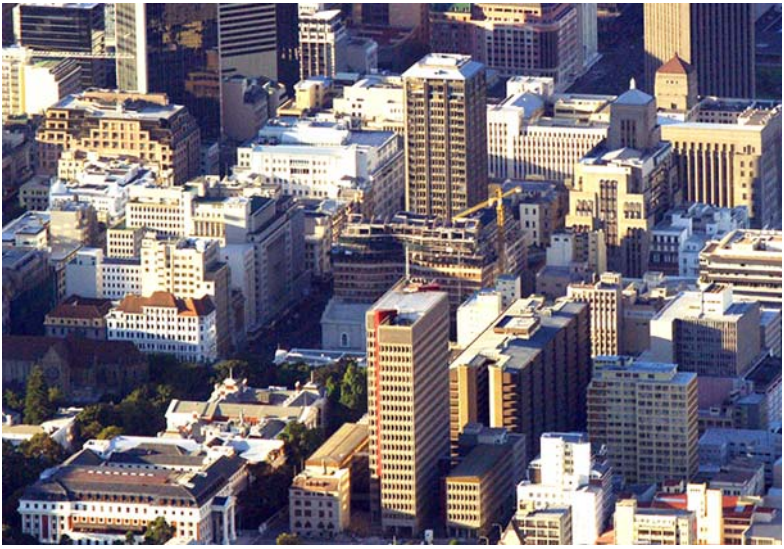


Figure 1–3: Commercial Ribbon

1.17 Residential Sprawl. Residential sprawl areas consist mainly of low houses or apartments that are one to three storeys tall. The area is primarily composed of detached dwellings that are usually arranged in irregular patterns along streets, with many smaller, open areas between structures. Building techniques and materials may vary within and between residential areas. The effects are as follows:

a. *Observation and Fields of Fire.* Concealment in most residential areas is very good, as gardens and buildings can be used. In areas with terraced buildings, concealment is restricted to the interior of buildings. Cover and concealment may be restricted by street patterns and vegetation. Covert movement is generally difficult due to the number of people and dogs that can identify and indicate the presence of troops.

b. *Cover and Concealment.* Cover and concealment is limited in areas with terraced housing. If dispersed, residential area cover and concealment may be substantial, with some reinforcement and digging required.

c. *Obstacles.* Overhead power cables, vehicles and prepared demolitions (cratering) are the main sources of obstacle construction.

d. *Key Terrain.* Key terrain generally comprises sports fields, open areas and parks; churches and buildings of political or cultural significance; and major transport intersections.

e. *Avenues of Approach.* Main access roads provide the avenues of approach. Air approaches are usually good and rotary-wing landing zones are readily available. Rotary-wing aircraft can generally fly at low altitudes for effective offensive support, though with a corresponding risk.

1.18 Industrial Areas. Industrial areas (see Figure 1–4) are generally located on or along major sea, rail and highway routes in urban complexes. Older complexes may be located within dense, randomly constructed or close-orderly block areas. New construction normally consists of low, flat-roofed factory and warehouse buildings. In Asian cities, such buildings are normally found with a high-rise accommodation building within close proximity. It is critical to identify transportation facilities within industrial areas, because they (especially rail facilities) pose significant obstacles to military movement. The effects are as follows:

a. *Observation and Fields of Fire.* Large buildings and open spaces provide very good observation and fields of fire. Engagement ranges should be beyond minimum arming distance, with the interior volume large enough to fire some anti-armour weapons from inside.

b. *Cover and Concealment.* Forces may have to improvise in construction or position to achieve mutual support due

to the large open spaces. Bulk materials should be available for this.

c. *Obstacles.* Construction sites and timber yards, brickyards, docks and railway maintenance yards serve as primary sources of obstacles and provide barrier construction materials when rubble is not present or is insufficient. They can also provide materials to strengthen existing rubble obstacles or materials for antitank obstacles. Hazardous chemicals or bulk fuel may be stored in these areas.

d. *Key Terrain.* Key terrain includes dominant buildings covering approaches, the power supply, some chemical or fuel sites, and key transport junctions.

e. *Avenues of Approach.* Approaches from the air will be good. Some subterranean movement is probable and roads and rail generally provide very good approaches. There may be large open spaces.

Figure 1–4: Industrial Area

1.19 Outlying High-rise Areas. Outlying high-rise areas are similar in composition to city core areas, but may be composed of clusters of more modern multistorey high-rise buildings in outlying parts of the city (see Figure 1–5). Building heights and sizes may vary dramatically. Generally, there is more open space between buildings located in outlying high-rise areas than is found within the city core. Modern engineering and design improvements mean that most large buildings constructed since World War II are resilient to the blast effects of bombs and artillery attack. Even though modern buildings may burn easily, they often retain their structural integrity and may remain standing. Even after high-rise buildings burn out, they may still have military utility and should be treated with caution. A large structure can take 24 to 48 hours to burn out and become cool enough for soldiers to enter. The effects are as follows:

a. *Observation and Fields of Fire.* External observation and fields of fire can extend well beyond the high-rise area itself. Internal areas are more restrictive. High elevation is a threat to armour, so these areas need to be approached with caution.

b. *Cover and Concealment.* Cover and concealment in interior areas are good and make it very hard to locate enemy positions. Echoing increases difficulty.

c. *Obstacles.* The high density of people is an obstacle, with vehicles the main source of material blocks. Rubble is created quickly if high explosive (HE) weapons are employed.

d. *Key Terrain.* The key terrain includes structures dominating main road intersections.

e. *Avenues of Approach.* These are generally large enough to handle the volume of people who live and work there. Possible subterranean mass transit and large water tunnels make internal movement simple but vulnerable to high-angle attacks. Air approaches are vulnerable to AD weapons sited in elevated positions.

Figure 1–5: High-rise Area

1.20 Shanty Towns. Shanty towns do not necessarily follow any patterns and may be found in many different zones within urban areas (see Figure 1–6). Many underdeveloped countries are composed of small towns and villages and fewer large cities. Most of the structures in small towns and villages may be constructed from materials ranging from cardboard to concrete block. Some countries in arid regions depend on adobe for construction. Even some larger modern cities may have shanty towns at their edges, consisting of cardboard or tin shacks housing significant numbers of people. The effects are as follows:

a. *Observation and Fields of Fire.* Fields of view may be down to a few metres in some places. Commanders must carefully consider the effects of their operations in this area, including vehicles and weapons. The weak structures afford little protection, increasing the risk of

overpenetration, fratricide, civilian casualties, and large, rapidly spreading fires with little water to deal with them.

b. *Cover and Concealment.* Shanty towns will provide very good concealment for personnel and cover will vary depending on the materials used.

c. *Obstacles.* The dense population distribution of socially disadvantaged people makes shanty towns a high risk for civil disturbance and riots. The mass movement of residents may block troop movement and may be used as concealment for threat forces.

d. *Key Terrain.* Key terrain will be any terrain that can dominate surrounding areas, such as structures on high ground.

e. *Avenues of Approach.* The narrow paths found in shanty towns often do not accommodate vehicles.

Figure 1–6: Shanty Town

1.21 A unit with armoured vehicles may easily knock down and traverse structures without affecting mobility at all. However, their destruction may cause unacceptable civilian casualties, in which case mobility becomes more restrictive. It may also be counterproductive to information actions and the ability to work with or gain acceptance from the local people. Another important consideration is the ROE for the operation. The appropriate use of armoured vehicles will need to be considered.

1.22 **Patterns of Roads.** Most cities will have a combination of any of the following:

a. *Grid.* This is a network of roads that intersect at right angles. They are found in modern cities or old cities that have had significant rebuilding. Movement and control is relatively simple. The effect of this is a grid of C2 and mutual support. Manoeuvre is simple enough to achieve by patrols moving parallel to each other, making rapid response to any change in a plan possible. It may be vulnerable to stand-off attack and channelling, and is usually of dense construction.

b. *Rayed.* These are streets that fan out from a given focal point at less than 6400 mils, usually along a natural barrier. Simple control of movement is more difficult than in a grid system as FE spread out or converge. The effect is that, as patrols move further from the focal point, mutual support is more difficult to achieve. Rapid response, requiring lateral movement between rays, may be difficult and time consuming.

c. *Radial.* These are streets that fan out from a given focal point, with movement and control the same as for rayed. The effect is that convergence will require careful control to avoid bunching and reducing mutual support. As for rayed patterns, lateral movement between rays may be difficult.

d. *Radial-ring.* This is the same as for a radial pattern, but with concentric circles moving out. This makes control

simpler as it aids lateral movement between the radial streets, enabling FE to better support each other. The effect is that lateral movement is simpler than the two previous examples. Random movement of patrols is better than on the grid system, with less channelling.

e. *Contour Forming.* This pattern involves a pronounced terrain relief that influences constructing roadways along lines of elevation. Primary roads run along the contour lines with others connecting them. Movement along contours is simple; however, movement against the contour grain is difficult. The effect is that cross-grain movement may be difficult, depending on the density of constructions. Very predictable movement patterns may lead to obvious choke points or ambush sites.

f. *Irregular.* Irregular street patterns have been engineered without geometric patterns for aesthetic or functional reasons, such as residential areas or an old city core. Both control and movement are difficult in this pattern, as FE are continually converging or spreading out. Maintaining direction will require detailed planning and good control during the execution. The effect is that control is more difficult than in any other type. Movement is less predictable. There is less channelling and threat from stand-off unless the LOS is very long. There is the ability to move behind a target and cut off withdrawal.

Effects of Urban Terrain on Operations

1.23 Urban environments create many limitations and constraints that conspire to confuse and retard the most well planned military operations. Many of these are simply inherent characteristics of urbanised areas and will be problematic even in the absence of an adversary. Unlike open terrain, which is becoming increasingly transparent in a conventional military sense, the urban environment is likely to remain very much opaque as a result of these complexities.

1.24 Essentially, urbanised areas are 'dense'[6], and it is the cumulative effect of these 'densities' that makes it more

challenging than other environments. Density causes a compression of the battlespace, both in terms of time and space. In practical terms, density means that compared to other forms of terrain the following applies:

a. there are more physical entities in a given area;

b. there are more nodes (eg, communications) in a given area;

c. there are greater levels of activity in a given area; and

d. more decisions are required per unit of time.

1.25 There is a broad range of significant factors that make UO potentially the most difficult that a military will undertake. To effectively address these is not within the scope of this publication; however, there are some aspects which provide significant insight into the challenges of UO that should not be overlooked. The following characteristics will shape the way operations are conducted in urban terrain:

a. *Restricted Weapon Use.* Because there will almost certainly be civilians in the area, the ROE for the operation may preclude using certain weapons, such as HE or automatic fire, in order to limit collateral damage. Political considerations may also limit the type and method of weapon usage. Troops should train for operations that are subject to the controlled use of force as well as operations that permit more open ROE. Controlled force is divided into three elements:

(1) discrimination – the ability to rapidly and accurately identify the enemy from friendly forces and noncombatants;

(2) precision – the ability to rapidly and accurately place fire onto the target with the highest possible levels of hit probability; and

6. Glenn, R. W., *Heavy Matter: Urban Operations' Density of Challenges*, RAND Corporation, Santa Monica, California, 2000.

(3) surgical application – the use of minimum force to achieve the aim, which involves special weapon techniques and the ability to assess damage quickly.

b. *Restricted Fields of Fire and Observation.* Urban structures limit arcs of observation and fire. Most buildings are built parallel to streets; therefore, the view from the building is generally across the street and not along the street.

c. *Dead Spaces.* Urban terrain creates many dead spaces that cannot be covered by direct fire. These will include buildings, rooms, cupboards, cellars, attics and tunnels. In combat, dead spaces must be cleared thoroughly and methodically. They can also be used to good effect by FE during infiltration and movement.

d. *Channelling.* Urban terrain, such as buildings and streets, forces both fire and movement into narrow spaces. Unexpected or concealed routes and entry points should be used whenever possible. Smoke and fire support may be required to move across certain areas.

e. *Confinement and Rebound of Weapon Effects.* The blast and fragmentation effects of weapons, as well as their range, are limited by urban structures. Projected weapons such as grenades may rebound off hard surfaces and become a threat to the firer. The hard, flat nature of most urban structures will increase the number of ricochets. There may be secondary fragments of glass, steel, masonry and so on which could pose a danger to friendly forces as well as the enemy. The confining effect of rooms will greatly increase the noise and concussive effects of certain weapons to a level that quickly becomes debilitating to friend and foe alike.

f. *Cover and Concealment.* Due to the abundance of dead spaces, concealment may be readily available; however, finding concealment while still engaging the enemy is

often difficult. Cover is also readily available, but it is often difficult to gauge its effectiveness until it has already been engaged.

g. *Proximity of Opposing Forces.* The cover provided by urban terrain causes opposing forces to operate in close proximity. Targets are exposed fleetingly and at short range. This requires soldiers to maintain a high level of close quarter battle shooting expertise. It also mandates a high level of individual training and alertness to avoid friendly clashes. Weapons and explosives will often be used at short range, and this form of close combat can impose great physical and mental stress.

h. *Isolation.* Buildings and walls can quickly cause individuals and groups to become isolated from each other, and control is easily lost. A high standard of soldier is required for these operations, as well as a sound, well-rehearsed plan and a measure of directive control so that soldiers can continue to operate without constant direction from higher command.

i. *Three-dimensional Battle.* Because of the nature of the urban environment, the enemy threat can come from above and below as well as from the traditional 360° horizon. This has several implications:

(1) The degree of alertness required is substantially greater than in the rural environment.

(2) Advanced weapon-handling techniques are required, particularly in relation to firing projected grenades at targets some distance above ground level.

(3) The assault of positions above or below ground level requires special techniques.

(4) Commanders must be prepared to exploit the third dimension during infiltration, assault and exfiltration.

j. *Heavy Resource Usage.* Because of the characteristics already mentioned, resources such as ammunition, grenades, explosives and water are depleted very rapidly. As the ability to resupply is generally limited, it is important that, where possible FE do not become involved in lengthy battles.

k. *Communication Difficulties.* Urban structures may often interfere with radio and visual communications systems, even over very short distances. Ultra high frequency (UHF) radios will generally outperform very high frequency (VHF) radios in urban terrain.

l. *Presence of Civilians.* It is likely that there will be civilians in urban areas, despite the onset and continuation of fighting. Additionally, most installations such as power stations, factories and so on employ a civilian workforce.

m. *Fire Risk.* Most urban structures will burn easily, especially those in underdeveloped areas. Installations and buildings containing fuels, lubricants and gas storage tanks are also very prone to fire.

n. *Nuclear, Biological and Chemical Defence.* Commanders should be aware of how the built-up environment affects the protection, detection and decontamination process.

Subterranean Systems

1.26 Subterranean systems offer concealment and protected routes, which an FE may choose to exploit during urban movement. Normally, the FE would not use a subterranean route to reach a target unless it was certain that the route was viable and secure. There may be occasions, however, when the information provided proves to be inaccurate or unknown systems are entered. Commanders, therefore, must be familiar with the various types of subterranean systems and able to work in confined spaces underground.

1.27 In larger cities, subterranean features include sunken garages, underground passages, subway lines, utility tunnels, sewers

and storm drains. Many of these features allow troop movement. Even in smaller towns, sewers and storm drains may permit soldiers to move beneath street level during operations.

1.28 Types of System. Some of the different types of subterranean systems include:

a. *Railway Systems.* These may be railway lines which have been gradually built over during urban development, or tunnels dug well below ground level. Both types may provide points of access to parts of the city.

b. *Electricity, Telephone and Gas Systems.* These are generally not large enough to allow movement through them, but have various chambers and access points for maintenance purposes.

c. *Drainage and Sewerage Systems.* These are often large enough for the passage of personnel. The systems are sited to flow from high to low ground, becoming larger after junctions and as they get lower. Where the system is required to flow across level ground, pumping stations will be sited to assist. Access is normally via shafts, and special tools or keys are required to remove covers. These systems can also include substantial canals that have been built over.

1.29 Hazards. Some of the hazards that may be encountered when working in subterranean systems are as follows:

a. *Chemical Defence.* It is possible that the enemy will have saturated the system with chemical agents to deter penetration. Alternatively, chemicals used elsewhere on the battlefield may have seeped into the system. It is imperative that troops are alert to the possibility of a chemical attack and take protective measures whenever necessary.

b. *Toxic Gases.* Decomposing sewage produces toxic gases. Systems are designed to have an airflow system

to remove this, but all members should be aware of and watch for the warning signs of dizziness or nausea.

c. *Rainfall.* Even light falls of rain may cause flooding in some systems. Warning signs are a sudden increase in wind/air speed and a rushing noise.

d. *Disease Organisms.* Micro-organisms and bacteria of various strains present a hidden danger. Troops should take care to avoid cuts and disinfect any skin breakages immediately.

e. *Fauna.* Subterranean systems can abound with all types of insect, animal and reptile life. Many of these animals are dangerous to humans if disturbed.

f. *Noise.* Equipment must be sound-deadened or noise from the group may be channelled towards the enemy, alerting them of the approach. Another hazard from noise is hearing impairment. If there is contact in a tunnel, the noise of gunfire will be deafening and hearing can be quickly impaired to the point where a soldier wearing hearing protection will hear more clearly than one without. Hearing protection must be carried and placed on at the first opportunity after contact.

g. *Channelling.* A group moving along a narrow tunnel is very vulnerable to frontal fire.

h. *Entrapment.* In a subterranean system with limited entry and exit points, it is possible for a force to be cut off and trapped underground. It is essential that the force maintain a secure point of entry (POE).

i. *Weapon Systems in Tunnels.* The confined space of tunnels and sewers amplifies the sound of weapons firing to a dangerous level. The overpressure from grenades and mines exploding in a sewer or tunnel can have adverse effects on friendly troops, causing injuries such as ruptured eardrums and wounds from flying debris. Also, the blast effects of these munitions can ignite gases found in sewers. For these reasons, small

arms weapons should be the principal weapon system employed in tunnels and sewers. Friendly troops should be outside tunnels, or out of range of the effects, when mines or demolitions are detonated. The provision of additional ear protection for subterranean operations should be considered.

j. *Psychological Factors.* Combat operations in subterranean passages are much like night combat operations. The psychological factors that affect soldiers during night operations reduce confidence, cause fear and increase a feeling of isolation. This feeling of isolation is magnified further by the tight confines of the tunnels. The layout of tunnels could require greater dispersion between positions than is usual for other operations. Important factors are:

(1) Commanders should enforce measures to dispel the feelings of fear and isolation experienced by soldiers in tunnels. These measures include leadership training, physical and mental fitness, sleep discipline and stress management.

(2) Commanders should maintain communication with soldiers manning positions in the tunnels by personal visits or field telephone. Soldiers manning positions below ground should be given as much information as possible on the organisation of the tunnels and the importance of their task. They should be briefed on plans and other positions if their primary positions become untenable.

(3) Physical and mental fitness can be maintained by periodically rotating soldiers away from tunnels to allow them to stand and walk in fresh air and sunlight. Stress management is also a factor of operations in tunnels. Historically, combat in built-up areas has been one of the most stressful forms of combat. Continuous darkness and

restricted manoeuvre space causes more stress to soldiers than street fighting.

SECTION 1-3. ENGAGEMENT AREAS

Overview

1.30 The characteristics and nature of combat within an urban environment can degrade weapon effects. Commanders at all levels have to consider a number of factors in various combinations when choosing their weapons.

1.31 This section covers the procedures for determining EA and describes the effects of weapons in the urban environment.

1.32 Hard, smooth, flat surfaces are characteristic of urban targets. Rounds rarely impact perpendicular to these flat surfaces, but at an angle. This reduces the effect of a round and increases the threat of ricochets. Although in the past up to 25 per cent of impact-fuzed explosive rounds failed to detonate because of disruption when glancing off hard surfaces, modern graze-burst fuzes should alleviate this problem.

1.33 Engagement ranges are close. Studies and historical analyses have shown that only 5 per cent of all targets are more than 100 m away. About 90 per cent of all targets are located 50 m or less from the identifying soldier. Few personnel targets will be visible beyond 50 m, and these usually occur at 35 m or less. Minimum arming ranges and troop safety from back-blast or fragmentation effects have to be considered.

1.34 Engagement times are short. The enemy presents only fleeting targets. Enemy-held buildings or structures are normally covered by fire and often cannot be engaged with deliberate well-aimed shots.

1.35 Depression and elevation limits for some weapons create dead space. Tall buildings form deep canyons that are often safe from indirect fire. Some weapons can fire rounds to ricochet behind cover and inflict casualties. Target engagement from

oblique angles, both horizontal and vertical, demands superior marksmanship skills.

1.36 Smoke from burning buildings, dust from explosions, shadows from tall buildings, and the lack of light penetrating inner rooms all combine to reduce visibility and to increase a sense of isolation. Added to this is the masking of fire caused by rubble and man-made structures. Targets, even those at close range, tend to be indistinct.

1.37 Urban fighting often becomes confused melees with several small units attacking on converging axes. The risks from friendly fire, ricochets and fratricide have to be considered during the planning phase of operations, and control measures continually adjusted to lower these risks. Commanders and soldiers alike have to be aware of the locations and intentions of friendly forces and clearly mark their own progress to avoid the potential for fratricide.

1.38 Both the firer and target may be inside or outside buildings, or they may both be inside the same or separate buildings. The enclosed nature of combat in built-up areas means that the weapon's effect, such as muzzle blast and back-blast, has to be considered as well as the round's impact on the target.

1.39 Usually a man-made structure has to be attacked before the enemy inside can be attacked. Therefore, weapons and demolitions can be chosen for employment based on their effects against masonry and concrete rather than directing against the enemy.

1.40 Modern engineering and design improvements mean that most large buildings constructed since World War II are resilient to the blast effects of bomb and artillery attack. Even though modern buildings may burn easily, they often retain their structural integrity and remain standing. Once high-rise buildings burn out, they are still useful for combat purposes and are almost impossible to damage further. A large structure can take 24 to 48 hours to burn out and become cool enough for soldiers to enter.

Urban Engagement Area Development

1.41 EA development is a logical process that can easily be adapted and applied to a range of tactical situations within complex warfighting. Under some circumstances, aspects of the process may not be possible or may seem inapplicable due to resource limitations or time imperatives; however, EA development should still be considered in each of its seven steps.

Steps in Engagement Area Development

1.42 The seven steps for EA development are as follows:

a. determine the avenues of approach,

b. determine the threat scheme of manoeuvre,

c. determine where to kill the enemy,

d. emplace weapon systems,

e. plan and integrate obstacles,

f. integrate offensive support, and

g. rehearse.

1.43 These are considered sequentially, but elements overlap. For example, once weapon system locations have been determined, the integration of obstacles and offensive support should occur concurrently with the development of armoured fighting vehicle (AFV) and support weapon fighting positions. Whenever possible, combat support advisers, such as combat engineers and the joint offensive support team, should collaborate with the team leader throughout the entire process.

1.44 **Determine the Avenues of Approach.** Determine the avenues of approach (see Figure 1–7) by considering the following questions:

a. What avenues of approach are available to the enemy?

b. What size force will each avenue support?

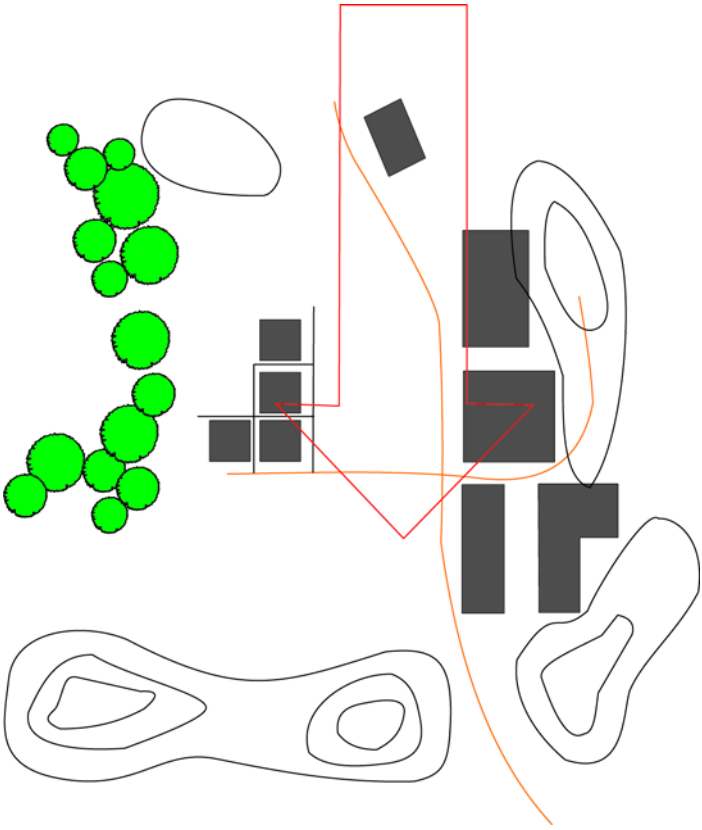


Figure 1–7: Determine Enemy Avenues of Approach

1.45 Determine the Threat Scheme of Manoeuvre. Determine the threat scheme of manoeuvre (see Figure 1–8) by considering the following questions:

a. Where does the enemy want to go?

b. What are the enemy's anticipated mission and objectives?

c. How will the enemy organise their attack, including potential support by fire (SBF) or overwatch positions?

d. How will the enemy use reconnaissance assets?

e. Where and when will the enemy commit follow-on forces?

f. What are the enemy's likely movement rates?

g. How will the enemy respond to friendly actions?

h. What are the high-value targets?

i. How and where might high-value targets be employed?

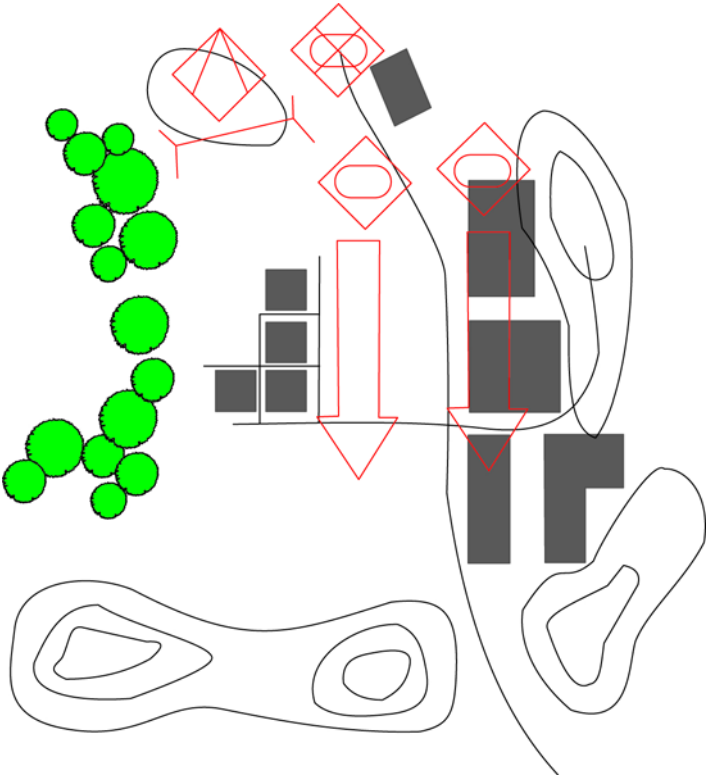


Figure 1–8: Determine the Threat Scheme of Manoeuvre

1.46 Determine Where to Kill the Enemy. Determine where to kill the enemy (see Figure 1–9) by considering the following:

a. Identify the enemy's most probable COA.

b. Identify where fire can be concentrated to best effect.

c. Define the EA.

d. Determine how many weapon systems are required to achieve sufficient destruction of the enemy.

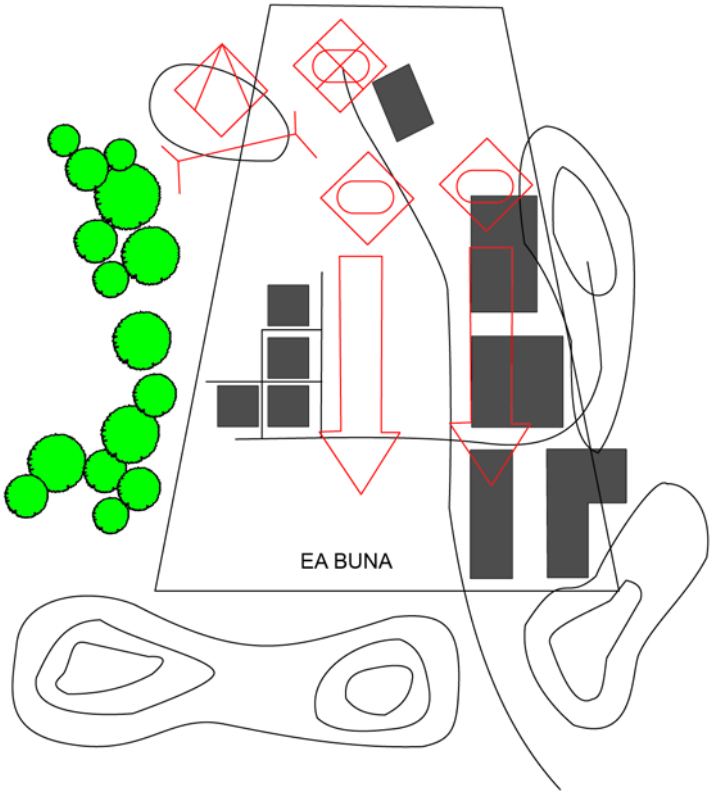


Figure 1–9: Determine Where to Kill the Enemy

1.47 Emplace Weapon Systems. Considerations for the emplacement of weapon systems (see Figure 1–10) are as follows:

a. Confirm which terrain will enable coverage of the EA with observation and/or fire.

b. Determine how many weapon systems will the terrain accommodate.

c. Identify target reference points for the coordination of direct fire.

d. Identify primary, secondary and alternative positions for AFV and weapons (eg, Javelin).

e. Ensure that the selected positions do not conflict with other elements of the combat team (CT).

f. Drive through the EA to confirm that selected positions are tactically advantageous. If possible, identify positions while driving through the EA in order to assess likely survivability.

g. Determine which weapon systems best suit the terrain, range and rate of fire requirements. How can stand-off from enemy systems be optimised?

h. Identify the support requirements for these systems (eg, dismounted protection at night).

i. Mark positions for subsequent digging by engineers.

j. Incorporate direct fire control techniques.

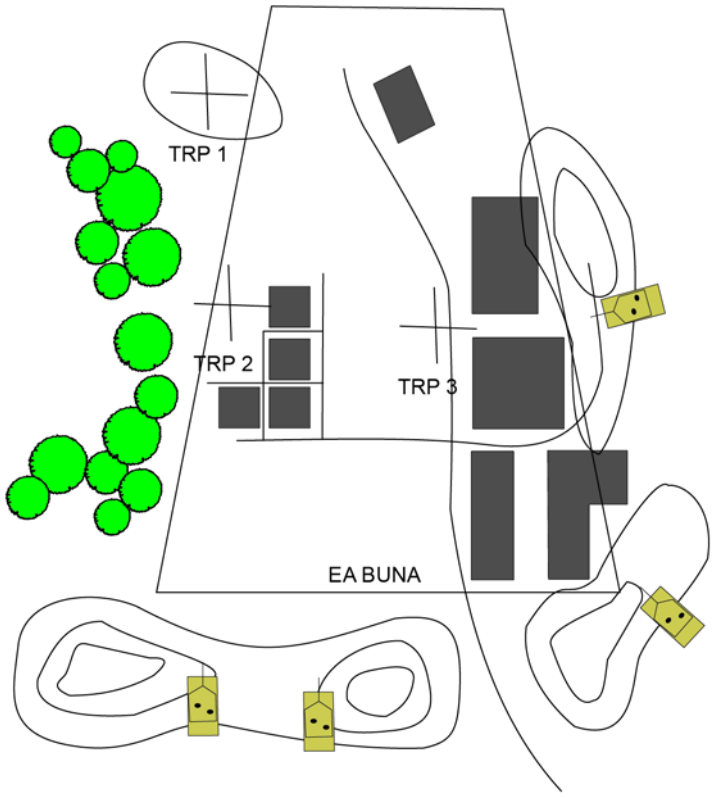


Figure 1–10: Emplace Weapon Systems

1.48 Plan and Integrate Obstacles. Considerations for the integration of obstacles (see Figure 1–11) are as follows:

a. Assess how the combination of terrain and obstacles might shape the enemy.

b. Identify the desired effects, such as separating the enemy's echelons and fixing the enemy in a specific area.

c. Check that the obstacles can be covered by fire and/or observation.

d. Determine the need for protective obstacles.

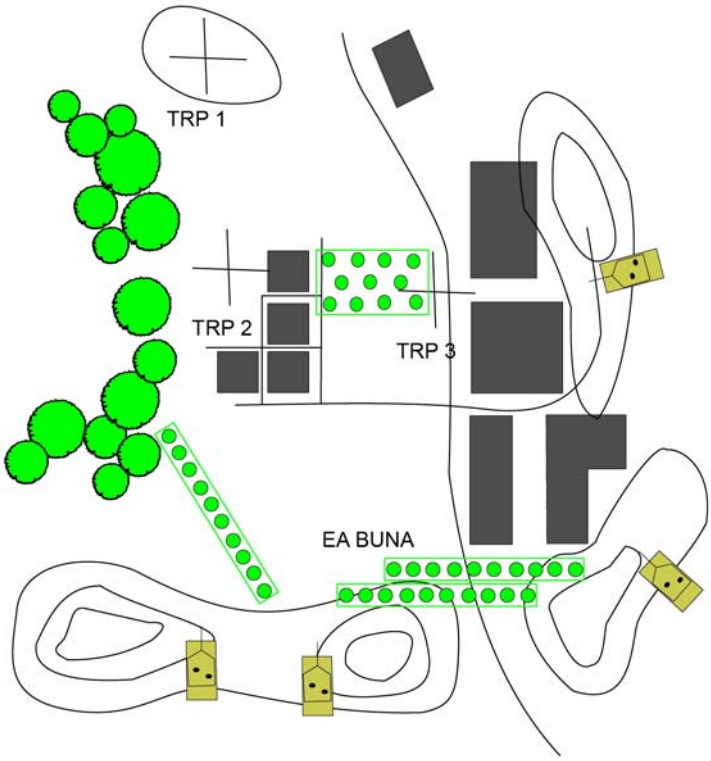


Figure 1–11: Plan and Integrate Obstacles

1.49 Integrate Offensive Support. Considerations for the integration of offensive support (see Figure 1–12) are as follows:

a. Determine the purpose of indirect fire (if not already advised by the CT commander).

b. Identify which potential targets require the use of offensive support (eg, enemy anti-armour systems that have range overmatch, second echelon units, etc.).

c. Determine where these should be engaged and where offensive support effects can be maximised without restricting the application of direct fire.

d. Establish the observation plan with redundancy for each target.

e. Adjust targets.

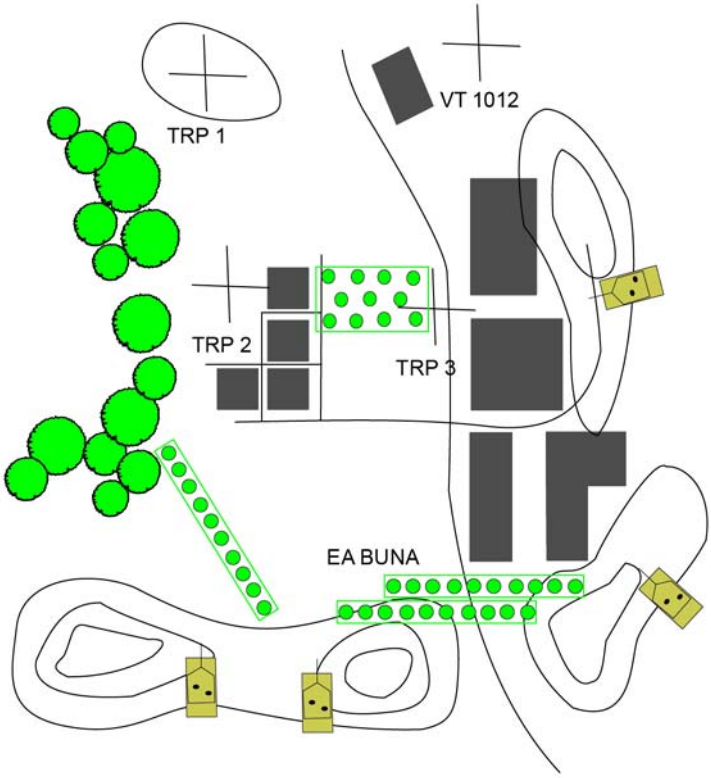


Figure 1–12: Integrate Offensive Support

1.50 Rehearse. The rehearsal is designed to confirm the following:

a. the rearward passage of lines of security forces;

b. the closure of obstacle lanes;

c. movement from hide to battle positions;

d. the use of direct fire control measures;

e. the shifting of fire;

f. displacement or jockeying criteria;

g. the locations of embus points for mechanised infantry; and

h. other CT/team procedures, such as casualty evacuation (CASEVAC) and the cross-levelling of ammunition.

SECTION 1-4. WEAPON EFFECTS IN URBAN ENVIRONMENTS

1.51 This section details the use and effects of commonly used weapon systems in the urban environment.

Rifle and Machine Gun

1.52 The rifle is the most common weapon fired in built-up areas. Specific points are as follows:

a. *Employment.* Close combat is the predominant characteristic of urban engagements. Riflemen have to be able to hit small, fleeting targets from bunker apertures, windows and loopholes. This requires pinpoint accuracy with weapons fired in the semiautomatic mode. Killing an enemy through a 20 cm loophole at a range of 50 m is a challenge, but one that will be common during combat in built-up areas:

(1) To suppress defenders when entering a room, a series of rapid bursts should be fired at all identified targets and likely enemy positions. This

is more effective than long bursts or spraying the room with automatic fire.

(2) When targets reveal themselves in buildings, the most effective engagement is the quick-fire technique with the weapon up and both eyes open.

(3) Within built-up areas, burning debris, reduced ambient light, shadows and smoke all limit the effect of night-vision and night-sighting devices. The use of aiming stakes in the defence and of the pointing technique in the attack, both using bursts, are night-firing skills required of all infantrymen. A soldier using night vision goggles (NVG) should be paired with a soldier not wearing NVG.

b. *Weapon Penetration.* The penetration that can be achieved with a 5.56 mm rifle ammunition round depends on the range to the target and the type of material being fired against. However, its effect against exterior walls of brick or concrete will be limited unless significant numbers of rounds are fired. Inside buildings, lightly constructed interior walls and furniture are likely to be penetrated. These effects should be considered when firing at enemy positions and when balancing the risk to friendly forces in the area.

c. *Protection.* Common barriers in built-up areas that stop a 5.56 mm round fired at less than 50 m are:

(1) one thickness of sandbags (250 mm);

(2) a 50 mm concrete wall (un-reinforced);

(3) a 200 L drum filled with water or sand;

(4) a small ammunition box filled with sand;

(5) a concrete (cinder) block filled with sand (the block will probably shatter);

(6) a plate glass windowpane at a 45° angle (glass fragments will be thrown behind the glass);

(7) brick veneer; and

(8) a car body (penetration and exit will depend on POE).

Medium and Heavy Machine Guns

1.53 In the urban environment, the 0.50 calibre machine gun and the 7.62 mm general support machine gun (GSMG) are very effective. They can provide final protective fire (FPF) along fixed lines and can be used to penetrate light structures, the 0.50 calibre machine gun being most effective in this role. In offensive operations, they are best suited to the direct fire support role. Tracers from both types of machine gun are likely to start fires; the 0.50 calibre tracer is more prone to this effect.

1.54 Weapon Penetration. The ability of the 7.62 mm and 0.50 calibre rounds to penetrate is also affected by the range to the target and type of material fired against.

Grenades

1.55 Hand grenades are used extensively during combat in built-up areas. Smoke grenades are used for screening and signalling. HE grenades are an essential weapon for assaulting and clearing buildings. They are the most used explosive munitions during intense combat in built-up areas. During World War II it was common for a battalion fighting in urban areas to use over 500 hand grenades in a day.

1.56 The HE grenade is the most commonly available grenade during combat in built-up areas and is used while clearing rooms. The overuse of HE grenades in lightly constructed buildings may cause total or partial collapse of the building. Additionally, there is a risk that fragments may penetrate internal walls, thus risking injury to friendly forces and civilians in adjacent rooms.

1.57 Though used primarily for smoke marking, the WP grenade may be effective in buildings; however, the smoke can be dangerous in heavy concentrations, making breathing difficult, and its use markedly increases the risk of fire.

1.58 Grenade Launchers. The use of a grenade launcher significantly reduces the vulnerability of the firer in comparison to the use of hand-thrown grenades. Grenade launchers should be used to assist initial entry into buildings and to launch grenades into openings above ground floor level. Their use inside buildings for room clearance is likely to be limited due to grenade arming distance constraints.

Mortars

1.59 The urban environment greatly restricts low-angle indirect fire. However, tubed artillery operating in the high angle and mortars with their high trajectory are less affected. For low-angle artillery fire, dead space is about five times the height of the building behind which the target sits. For artillery operating in the high angle and mortars, dead space is only about one-half the height of the building. Both mortars and artillery firing in the high angle can, therefore, provide indirect fire support in UO. However, unlike guns, the availability of mortars is usually guaranteed, and this makes them a vital component of indirect fire support. Specific points are as follows:

a. *Employment.* In offensive operations, mortars fire onto buildings and into the deep spaces between them. In defensive operations, mortars emplaced behind buildings are difficult for the enemy to locate accurately and even harder for them to hit. Points to note are:

(1) Mortars can be fired through the roof of a ruined building if the ground-level flooring is solid enough to withstand the recoil. If there is only concrete in the mortar base plate area, mortars can be fired using sandbags as a buffer under the base plates and kerbs as anchors and braces.

(2) The 81 mm ammunition may have limited effect on structural targets. Even with delay fuzes they seldom penetrate more than the upper storeys of light buildings. However, their wide area coverage and multi-option fuzes make them useful against

an enemy force advancing through streets, through other open areas or over rubble.

(3) Mortar platoons often operate more than one base plate during fighting in built-up areas. The lack of large open areas can preclude establishing a platoon base plate position.

(4) All of the standard mortar projectiles are useful during fighting in built-up areas. HE is the most commonly used round. WP is effective in starting fires in buildings and forcing the enemy out of cellars and light-frame buildings, and it is also the most effective mortar round against dug-in enemy tanks. Even near misses blind and suppress tank crews, forcing them to close hatches. Hits are difficult to achieve but are effective when successful.

(5) Mortar smoke tends to persist longer and give greater coverage in built-up areas than in open terrain.

(6) Urban areas degrade the effects of illumination ammunition. Illumination rounds are difficult to adjust and are often of limited use because of the deep canyons and building shadows. Rapidly shifting wind currents in built-up areas also affect mortar illumination, making it less effective.

b. *Effects of Mortar Fire.* The multi-option fuse on mortar rounds makes them effective weapons in urban terrain. Delay settings can increase penetration slightly, and proximity bursts can increase the lethal area covered by fragments. Tall buildings can cause proximity-fuzed mortar rounds to detonate prematurely if they pass too closely.

Anti-armour Weapons

1.60 66 mm Light Direct Fire Support Weapon. The 66 mm light direct fire support weapon (LDFSW) may be employed very

effectively in urban areas. It is suitable for short-range engagements and the relative ease with which it can be moved enhances its value to dismounted forces. Specific points are as follows:

a. *Employment.* The LDFSW is used primarily to defeat light armoured vehicles and neutralise fortified firing positions. Due to the design of the warhead and the narrow blast effect, the weapon is not as effective in this role as heavier weapons such as a tank main gun round. Light recoilless weapons can be fired from the tops of buildings or from areas with extensive ventilation. Points to note are:

(1) The LDFSW is most effective when firing from upper storeys or from the flanks and rear. When firing at main battle tanks, these weapons should always be employed against weaker areas in volley or paired firing. They normally require a number of hits to achieve a kill on a tank. Firing from upper storeys protects the firer from tank main gun and coaxial machine gun fire, since tanks cannot sharply elevate these armaments. In addition, the top armour on a tank is normally much thinner than elsewhere, which improves the likelihood of an effective immobilising strike. Using these techniques, LDFSW may be used in offensive and defensive operations and are particularly effective in AFV hunting and ambush tasks.

(2) The effect of LDFSW against buildings or defensive positions is likely to be limited. The shaped charge is unlikely to create a significant breach in a wall or to cause casualties among those inside the building. However, the blast and shock may be sufficient to neutralise a defensive position in a room for a short period. Against structures, shaped-charge weapons should be aimed about 15 cm below or to the side of a firing

aperture (see Figure 1–13). This enhances the probability of killing the enemy behind the wall.

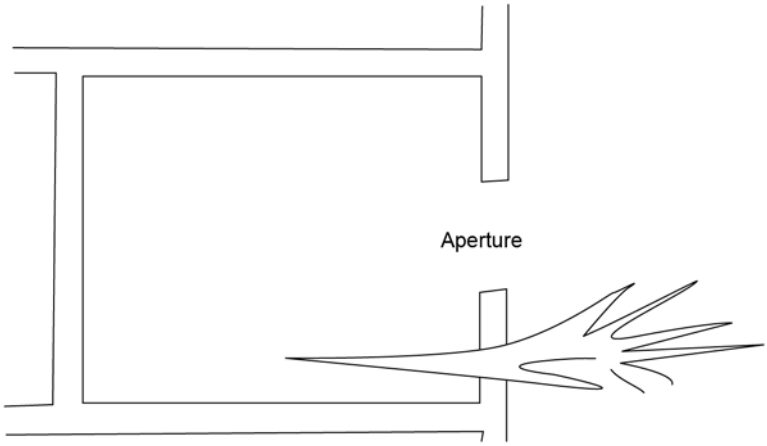


Figure 1–13: Point of Aim Against Structures

b. *Back-blast.* During fighting in built-up areas, the back-blast area in the open is more hazardous due to all the loose rubble and the channelling effect of the narrow streets and alleys. It is not advisable to fire LDFSW from inside a building; however, the US Army has conducted extensive testing on the effects of firing recoilless weapons in enclosed spaces. These tests have shown that firing from an enclosed space presents no serious hazards, even when the overpressure is enough to produce structural damage to the building. The most serious hazard that can be expected is hearing loss. This has to be evaluated against the advantage gained in combat from firing from cover.

1.61 Javelin. In UO, the Javelin's primary role is to defeat main battle tanks and other armoured combat vehicles. It has a significant capability against bunkers, buildings and other

fortified targets commonly found during fighting in built-up areas. Specific points are as follows:

a. *Employment.* The Javelin is best suited to tasks outside a built-up area where its range and weapon effect may be exploited fully. Hence tasks in the investment force, or in direct fire support in offensive operations and in the perimeter force for defensive operations, are the most suitable. Javelin can enhance surveillance by both day and night. Within built-up areas, it is best employed along major thoroughfares and from the upper storeys of buildings to attain long-range fields of fire.

b. *Obstacles.* When fired from street level, power lines or other overhead obstacles could interfere with missile flight.

c. *Back-blast.* Due to the Javelin's soft launch capability, the effects and signature of back-blast are reduced when compared to other like systems.

d. *Weapon Penetration.* The Javelin can achieve significant penetration against typical urban targets. Penetration, however, does not mean a concurrent destruction of the structural integrity of a position. The shaped-charge warhead produces relatively little spall. The Javelin is unlikely to create an entry point in a wall.

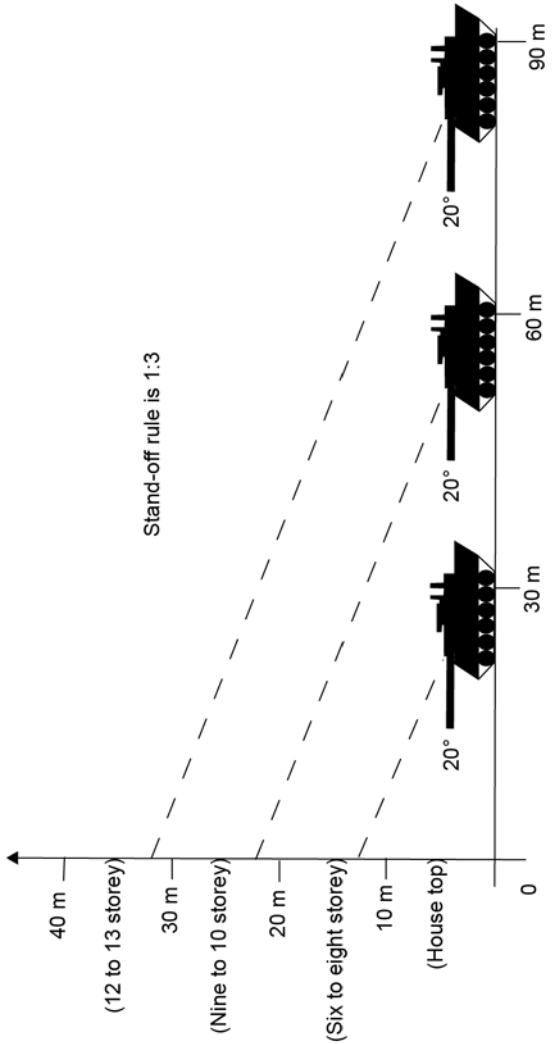
Armoured Weapons

1.62 The powerful, high-velocity gun mounted on the tank provides the infantryman with a key requirement for victory in built-up areas: heavy direct fire support. This support may be provided from outside a built-up area using the range of the tank's main armament and affording it greater protection from hand-held antitank weapons, or tanks may be used in intimate fire support of dismounted infantry.

1.63 The tank is one of the most effective weapons for heavy fire against structures. The primary role of the tank gun during fighting in built-up areas is to provide heavy direct fire against buildings and strong points that are identified as targets by the

infantry. The wall and fortification breaching effects of the 120 mm tank gun are major assets to infantrymen fighting in built-up areas.

1.64 Limitations. The particular limitations of elevation, depression and traverse are shown in Figure 1–14 and Figure 1–15. Where possible, tanks should take advantage of parks and gardens that offer the best fields of fire. The weight of tanks may cause the collapse of cellars, drains and underground systems, and therefore routes and firing positions have to be reconnoitred with care.



Note:
The HESH is ineffective at less than 32 m of light.

Figure 1–14: Elevation Restrictions

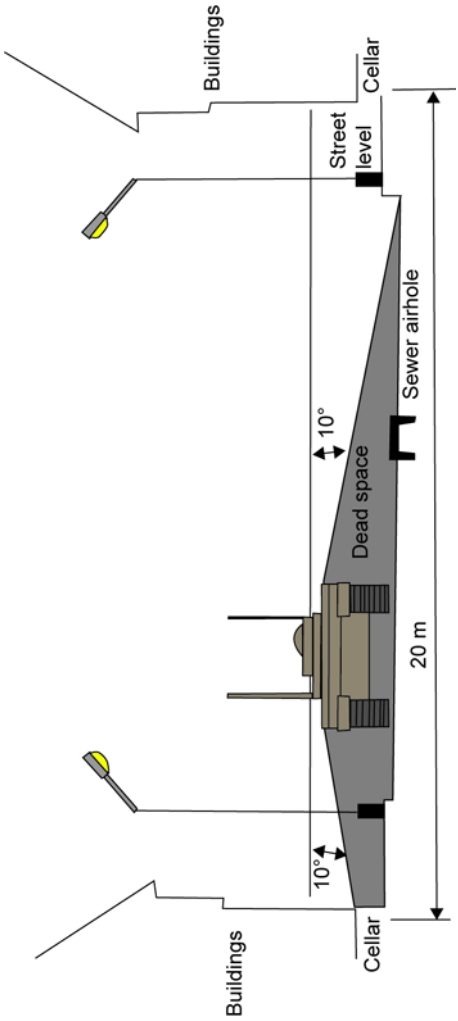


Figure 1–15: Depression Restrictions

1.65 Firing Angles. Tank guns produce their best urban target effects when fired perpendicular to a hard surface. For example, a 120 mm armour-piercing fin-stabilised discarding sabot round cannot penetrate a 5 cm reinforced concrete wall at an angle greater than 45°.

1.66 Ammunition. The HE squash head is the most effective ammunition against buildings and is likely to cause considerable structural damage and numbers of casualties.

1.67 Employment. Tanks are best suited to tasks within the investment force, or in the direct fire support group in offensive operations and in the perimeter force in defensive operations. In these roles, they can make maximum use of their firepower and mobility without exposure to the threat of handheld anti-armour weapons. Tank heavy forces could be at a severe disadvantage during fighting in built-up areas, but a few tanks working with the infantry can be most effective, especially if their operations are closely coordinated.

1.68 Other Considerations. Other points to note are as follows:

a. Tanks need infantry on the ground to provide security in built-up areas and to designate targets. Against targets protected by structures, tanks should be escorted forward to the most covered location that provides a clear shot. On-the-spot instructions by the local infantry commander are essential to ensure that the tank's fire is accurate and its exposure is limited. The tank commander may have to halt in a covered position, dismount and reconnoitre a route forward into a suitable firing position.

b. When the tank main gun fires, it creates a large fireball and smoke cloud. In the confines of a built-up area, dirt and masonry dust is also picked up and adds to this cloud. The smoke and dust of the explosion further obscure the target. Depending on the local conditions, this obscuration could last as long as 2 or 3 minutes. Infantry can use this period to reposition or advance

unseen by the enemy. Caution has to be exercised, however, because the enemy might also move.

c. Tank guns create an overpressure and noise hazard to exposed infantrymen. All dismounted troops working near tanks should wear suitable ear protection. They should also avoid moving into the tank's 60° frontal arc when the tank is firing armour-piercing discarding sabot because of the fragmentation effect of the petals from the discarded sabot.

d. Tanks are equipped with powerful thermal sights that can be used to detect enemy personnel and weapons hidden in shadows and behind openings. Dust, fires and thick smoke significantly degrade these sights.

e. Burning particles from WP turret-mounted grenade launchers can easily start uncontrolled fires and are hazardous to dismounted infantry near the tank. The tank commander and the local infantry commander should coordinate when and under which conditions these launchers can be used.

f. The tank's size and armour can provide dismounted infantry with cover from direct fire weapons and fragments. With coordination, tanks can provide moving cover for infantrymen as they advance across small open areas. However, enemy fire striking a tank but not penetrating is a major threat to nearby infantry. Fragmentation generated by antitank rounds and ricochets off tank armour has historically been a prime cause of infantry casualties while working with tanks in built-up areas.

g. Some tanks (normally the squadron 2IC tank) are equipped with dozer blades that can be used to remove rubble barriers under fire, breach obstacles or seal exits.

h. Tanks are equipped with a 7.62 mm coaxial-mounted GSMG and commander's GSMG, both of which may be employed in the sustained fire role to support

dismounted infantry operations or to neutralise the threat from enemy tank-hunting parties.

Artillery and Naval Gunfire

1.69 A major source of fire support for infantry forces fighting in built-up areas is the support provided by field artillery weapons. If the built-up area is near the coast, naval gunfire can also be used. Field artillery employment can be in either the indirect or direct fire mode.

1.70 **Indirect Fire.** Indirect artillery fire has a limited effect on structural targets, with HE shells (even fuzed delay) tending to detonate in the upper storeys rather than in structurally critical areas. Tall buildings also create areas of indirect fire dead space, which are areas that cannot be engaged by indirect fire due to a combination of building height and angle of fall of the projectiles. Usually the dead space, for low-angle indirect fire, is about five times the height of the highest building behind which the target lies. For high-angle indirect fire, this reduces to about one-half the building height (see Figure 1–16). Where dead space remains a problem, siting guns off to a flank should be considered.

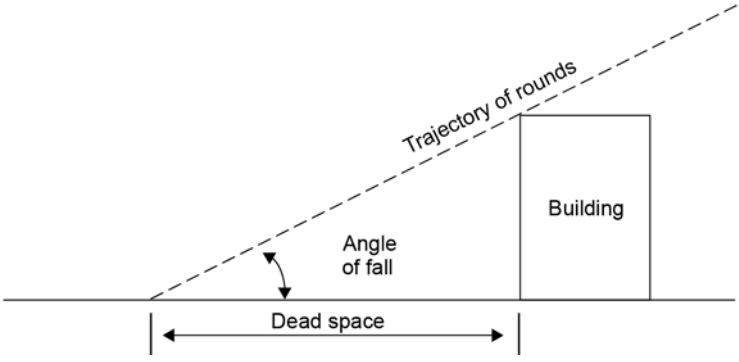


Figure 1–16: Indirect Fire Dead Space (Low Angle)

1.71 Weapon Effects. When considering the use of artillery, problems associated with obscuration caused by dust and smoke should be taken into account. In addition, problems arise because of range probable error, where only half of the rounds fired on the same data can be expected to fall within one range probable error of the intended target. This means that, when firing indirect fire into built-up areas with tall buildings, it is necessary to double the normal ammunition expenditure to overcome the problem of a reduced target area and range probable error. Within these limitations, indirect artillery has a significant role in operations in urban environments. Other points to note are as follows:

a. Weapons of at least 155 mm are necessary when attacking buildings with reinforced concrete, stone or brick walls. Even with heavy artillery, large expenditures of ammunition are required to knock down buildings of any size. The use of 105 mm guns against buildings should be considered when the buildings are 'soft' or where minimising collateral damage is a factor.

b. Bomblets and HE ammunition will have a significant effect on rooftop observation posts (OP), AD equipment or snipers mounted on high buildings, and troops in the open.

c. Close support indirect artillery can be used to 'fix' enemy located elsewhere in the built-up area but not in direct contact.

d. Smoke can be effective, particularly when used to blind an enemy not equipped with thermal imaging equipment. A mixture of smoke and HE will be effective in preventing the enemy from using their direct fire weapons to maximum effect. When considering the use of smoke, it must be remembered that WP is liable to set buildings on fire.

e. At night, illuminating rounds can be used to light enemy positions and highlight movement. Illuminating missions should be carefully coordinated with the supported arms

to ensure that light-sensitive systems are not adversely affected and that own troops are not themselves illuminated. The deep shadows cast by illuminating ammunition should also be taken into account.

f. The roles of general support artillery to isolate the close battle and to attack enemy reserves, HQ and artillery should not be underestimated.

g. Naval gunfire, because of its high velocity, flat trajectory and lack of a high-angle capability, is more affected by terrain masking than land-based artillery. It can also be more difficult to adjust because gun target lines are constantly changing.

1.72 Direct Fire. The 155 mm self-propelled artillery pieces are not as heavily armoured as tanks, but they can still be used during combat in built-up areas. In light, airborne or commando operations, where tanks and self-propelled artillery may not be deployed, 105 mm towed artillery can also be used. Both will need to be adequately protected by infantry. Towed equipment is capable of being manhandled across rubble or other obstacles and into buildings in relative silence. The most likely use of artillery in the direct fire role is to fire against strong points within the urban environment, notably those that tanks cannot engage because of their limited elevation. Unlike recoilless weapons, artillery pieces do not lead to problems associated with concussion and backblast.

1.73 Target Effects. The 155 mm HE shells, fuzed delay or plugged[7], will have a devastating effect against masonry constructions or field fortifications. The 105 mm shells, similarly fuzed, will have a lesser but still significant effect.

1.74 Siting of Artillery Observers. The need to cover by observation the approaches to built-up areas and the restrictions on observation imposed within built-up areas will severely test limited artillery observation resources. Artillery commanders will, therefore, need to produce detailed

7. Fuzes will often fail to activate over the short ranges employed.

observation plans, including making maximum use of airborne OP, reconnaissance troops and unmanned aerial vehicles (UAV). Other points to note are as follows:

a. *Liaison.* There will also be an increased reliance on calls for fire using artillery target indication procedures. Close liaison has to be maintained between artillery observers and supported arm commanders if fire is to be brought to bear safely in all circumstances.

b. *Offensive Operations.* Forward observation officers (FOO) will often deploy as part of the assaulting force and there may be a requirement to site anchor OP. However, given observation limitations and the inevitable uncertainty over the location of friendly forces, it is important that artillery observers do not become embroiled in detailed street and house clearances. Consideration should be given to artillery observers establishing a series of OP that make maximum use of the range of their surveillance and target acquisition systems. This may not always be close to their supported arms commander, in which case the closest possible liaison should be maintained by combat net radio. Anchor OP should assist in lifting fire during the approach to a built-up area and in identifying movement of reserves and reinforcements around the outskirts. Consideration should also be given to siting a FOO with the investment force to observe and report friendly and enemy movement around the built-up area.

c. *Defensive Operations.* Particular points to note are:

(1) *Perimeter Action.* Inevitably, there will be an insufficient number of artillery observers and mortar fire controllers to cover all eventualities. Perimeter posts must, therefore, be capable of calling down fire quickly, and defensive fires must be well known. Each FOO will need to select and prepare a number of OP locations sited to overlook the most likely enemy approaches and occupy them as necessary.

(2) *Defended Locality Action.* During the defended locality action there may be two conflicting requirements. There is the need firstly to bring accurate fire to bear on enemy troops as they enter the built-up area, and secondly to provide close liaison to supported arms commanders.

1.75 To satisfy the former requirement, consideration should be given to FOO being deployed on the perimeter or in high, and possibly vulnerable, buildings. To satisfy the latter requirement, FOO should be sited as close as possible to their supported commanders. A balance will often need to be struck. In exceptional circumstances OP parties can be split, but this cannot be sustained over protracted operations.

Aerial Weapons

1.76 Both rotary- and fixed-wing aircraft can quickly deliver large volumes of firepower over large built-up areas. Specific targets are hard to distinguish from the air. Good ground-to-air communications are vital to successfully employing aerial firepower. Pilots and aircrew have historically tended to overestimate the effects on defenders of HE ordnance. Modern, large buildings are remarkably resistant to damage from bombs and rocket fire.

1.77 **Rotary-wing Aircraft.** Armed helicopters can be used to engage targets in built-up areas. Enemy armoured vehicles in small parks, boulevards or other open areas are good targets for armed helicopters.

1.78 **Fixed-wing Aircraft.** Close air support (CAS) to ground forces fighting in built-up areas is a difficult mission for fixed-wing aircraft. Targets are hard to locate and identify, and enemy short-range AD weapons are hard to suppress, for the following reasons:

a. Enemy and friendly forces could be intermingled.

b. Enemy and friendly forces may only be separated by a single building, making the accurate delivery of ordnance difficult. Marking panels, lights, electronic

beacons, smoke or some other positive identification of friendly forces is needed.

c. General-purpose bombs, usually 1000 lb bombs, are moderately effective in creating casualties among enemy troops located in large buildings. High-dive angle bomb runs increase accuracy and penetration but also increase the aircraft's exposure to AD weapons. Low-dive angle bomb runs using high-drag (retarded) bombs can be used to get bombs into upper storeys. Penetration is not good with high-drag bombs. Sometimes aerial bombs pass completely through lightly clad buildings and explode on the outside.

d. Aerial rockets and cannon are only moderately effective against enemy soldiers in built-up areas, since rockets lack the accuracy to concentrate their effects. The cannon rounds penetrate only slightly better than the 0.50 calibre round, armour-piercing rounds can ricochet badly, and tracers can start fires.

e. Laser and precision-guided munitions can be effective against high-value targets. Special heavy laser-guided bombs to penetrate hardened weapons emplacements have been developed and are in service. There are problems associated with dense smoke and dust clouds hanging over the built-up areas, and laser scatter can restrict their use. If the launching aircraft can achieve a successful laser designation and lock on, these weapons have devastating effects, penetrating deep into the target.

SECTION 1-5. COMMAND AND CONTROL

1.79 Command. As a result of the isolating features of urban terrain, commanders must be well forward to deal with unexpected events and instil confidence in subordinates. As elements fight, isolated by the urban construction, commanders are unlikely to be able to assess the progress of their leading FE. Control of manoeuvre and support during building clearance battles may

be delegated to a leading junior commander. It is the junior commander who directs the actions of peer elements nearby. The primary activities of the next superior commander are to nominate the FE with priority to organise supporting combat power and deploy the reserve. Standard control measures remain relevant for operations in urban environments.

1.80 Control of Assault Formations. Where urban objectives border open areas, the assaulting troops and vehicles leave the forming-up point (FUP) and move across open ground in a conventional extended line. For an approach among buildings, troops and vehicles may use staggered, open or single file formation. This is suited to controlled movement through gaps, the use of linear cover, exploitation of dead space, entry into buildings and the passage of instructions. Where possible, different task elements move parallel to one another in an order of march that corresponds to the layout of the objective. This ensures that elements reach their objectives either simultaneously or in rapid succession. Alternatively, teams and multiples may be used during approaches in lower threat environments.

1.81 Forming-up Place. For a dismounted attack, the FUP should be protected and have unobstructed exits. If the FUP is sited in buildings, there must be a sufficient number of exits to allow a rapid departure without presenting concentrated targets to the enemy. If it is sited behind a building, the assault force must advance in a single file and move around one or both sides. Where the axis is a street, the FUP may be split across two side streets, allowing the troops to move off in single file close to the buildings.

1.82 Building Numbering. Buildings are allocated unique numbers for identification. Operations staff are responsible for the issuing and managing of the numbering system either through standard operating procedures (SOP) or on an as-required basis. Smaller FE will need to employ a method to designate particular windows, doors and other openings: this should be a simple system of gridded letters and numbers.

1.83 Boundaries. Main thoroughfares are an obvious choice as boundaries, so consideration should be given to lanes and back alleys or fence lines as boundaries. Commanders should avoid splitting FE across main streets.

1.84 Sectors. Sectors are allocated according to the nature of the terrain and task. In low-density areas, each sector may be several blocks in size. In a central business district, a single office complex may be designated as a sector. The sector for an urban penetration may consist of narrow sectors in comparison to those required for subsequent clearance. A sector must be clearly defined and easily recognisable. Each must be given a nickname or identifying letters.

1.85 Report Centres. Report centres are established by each task organisation after an allotted sector has been cleared. Combat supplies are delivered to these centres, and casualties are collected from them as time and the tactical situation permits.

1.86 Communications. Voice and radio communications can be difficult because of physical screening and the confined noise of battle. As a result, there may be a need for other methods of passing information and orders that could use tracer, line, telephone, sound, lights or runners.

1.87 Alternative means of communications are necessary for key events. It is vital that close communications are maintained between the assaulting troops, the supporting troops and the immediate commander. Shouting is common but ineffective. Link men can be used to pass messages when LOS is not available or conditions are difficult. VHF radios may remain outside the building with the fire support and protection (FSP) to provide higher communications. VHF sets are difficult to move with because of their size and are subject to sudden screening. UHF sets are preferred. It may sometimes be better to proceed on the understanding that radios will not be used and have planned alternative arrangements than to depend on radios only to find that communications are lost. Compact field telephones may provide reliable communications. Wire links will normally be used from CT upwards and between fire controllers and support weapon positions. Even with UHF radio

systems, rebroadcast facilities may be required. These will overcome many of the communication problems that arise in urban combat.

1.88 During attacks on buildings, C2 is difficult to maintain. The following measures may be helpful:

a. the use of well-known and thoroughly practised drills and SOP, so that only a minimum of additional information is required in briefings;

b. commanders remaining just behind their forward elements to give personal direction;

c. commanders retaining personal control of signal devices;

d. the division of attacks into short bounds so that commanders can quickly redirect personnel between bounds; and

e. commanders maintaining a reserve.

Annex:

A. The Battle for Fallujah

ANNEX A TO CHAPTER 1

THE BATTLE FOR FALLUJAH

Background

1. Fallujah is situated in central Iraq, 70 km west of Baghdad, approximately halfway up the Euphrates River. It had a population of 300 000 of primarily Sunni Islamic fundamentalists and was considered one of the most important Sunni cities in Iraq. Importantly, the coalition considered Fallujah as an insurgent 'hot spot'. The US 5th Marine Division's mission was to cordon the city, not allowing movement in or out. Their mission was to pacify insurgent fighters by allowing them to surrender or, failing this, the insurgents would be cleared from the city.

2. The case study set out in the following paragraphs is taken from a United States Marine Corps (USMC) squad after-action report, written by SGT Earl J. Catagnus Jr[8] and his squad NCO following the action during Operation PHANTOM FURY in April 2004. This report was written by infantrymen of the USMC for use within the USMC; it should therefore be noted that spelling, punctuation, terms and definitions differ from the Australian doctrinal usage in this publication. However, this should not detract from the author's intent and lessons that should be considered by the reader.

CASE STUDY

Lessons Learned: Infantry Squad Tactics in Military Operations in Urban Terrain during Operation Phantom Fury in Fallujah, Iraq

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Introduction

3. Historically speaking, military operations in urban terrain (MOUT) have created casualty figures that are extraordinary compared to similar operations conducted in different types of environments. The casualties in MOUT present a significant challenge to small unit leaders. Casualties hit Marine infantry squads and fire teams extremely hard because generally speaking they were already under the table of organization standards. Some squads in 3rd Battalion, 5th Marines (3/5) commenced the assault on the Jolan with only six Marines. It is the small unit leaders' duty to accomplish the mission with the least amount of casualties possible. In order for small unit leaders to complete the above task they need tactics and techniques that will prevent casualties.

4. Section 1 of the Scout/Sniper Platoon has attacked and cleared buildings with all the line companies in 3/5. The authors have observed nearly all the squads in the battalion and have 'rolled in the stack' with many of them. This is an experience which few in the battalion have. Knowing this, the authors believe it is their duty to consolidate their observations, produce a comprehensive evaluation of squad tactics and techniques, and pass it onto the squad leaders. The authors' intent is to give the squad leaders options in combat. It is by no means a 'bible', but it is a guideline. All the tactics and techniques have been proven in combat by one squad or another. Section 1 does not take any credit for the information contained within. The information was learned through the blood of the infantry squads in 3/5.

5. The entire evaluation has one underlying theme: Accomplish the mission with the least amount of casualties possible.

Terrain and Enemy

6. **Terrain.** The city of Fallujah, Iraq is unlike any city in which Marines have trained for. The layout of the city is random. Zoning distinguishing between residential, business, and industrial is nonexistent. An infantry squad could be clearing a house and next door may be clearing a slaughterhouse or furniture wood shop.

7. The streets are narrow and are generally lined by walls. The walls channelize the squad and do not allow for standard immediate action drills when contact is made. This has not been an issue because the majority of contact is not made in the streets, but in the houses.

8. The houses are densely packed in blocks. The houses touch or almost touch the adjacent houses to the sides and rear. This enables the insurgents to escape the view of Marine overwatch positions. The houses also are all made of brick with a thick covering of mortar overtop. In almost every house a fragmentation grenade can be used without fragments coming through the walls. Each room can be fragged individually.

9. Almost all houses have an enclosed courtyard. Upon entry into the courtyard, there is usually an outhouse large enough for one man. The rooftops as well as a large first story window overlook the courtyard. Generally, all the windows in the house are barred and covered with blinds or cardboard restricting visibility into the house.

10. The exterior doors of the houses are both metal and wood. The wood doors usually have a metal gate over top on the outside of the house forming two barriers to breach. The doors have two to three locking points. Some doors are even barricaded from the inside to prevent entry. There are generally two to three entrances to the house. The entrances are the front, the kitchen, and the side or rear.

11. The interior doors are also made of metal and wood. The differences between the interior and exterior doors are the strength and durability of the doors. Interior doors only have one locking point and most of them can be kicked in. All doors

inside and outside of the house are usually locked and must be breached.

12. The layout of all the houses is generally the same. Initial entry in the front door leads to a small room with two interior doors. The two doors are the entrance to two adjacent open seating rooms. The size of the rooms varies according to the size of the house. At the end of the sitting rooms are interior doors that open up into a central hallway.

13. The central hallway is where all the first floor rooms lead and it contains the ladderwell to the second deck. The second deck will contain more rooms and an exit to the middle rooftop. The middle rooftop will have an exterior ladderwell leading up to the highest rooftop.

14. **Enemy.** The two types of insurgents that the squads are engaging will be labeled the Guerrillas and the Martyrs in this evaluation. The Guerillas are classified by the following principles:

a. Their purpose is to kill many Marines quickly and then evade. They DO NOT want to die. Dying is an acceptable risk to the Guerillas, but their intention is to live and fight another day.

b. The tactics used are classic Guerilla warfare. The Guerillas will engage Marines only on terrain of their choosing when they have tactical advantage. After contact is made the Guerillas will disengage and evade.

c. Their evasion route normally is out of sight of Marine overwatch positions.

15. The Martyrs are classified by the following principles:

a. The Martyrs' purpose is to kill as many Marines as possible before they are killed. Time does not have any significance. The Martyrs want to die by the hands of Marines. The final outcome of their actions results in dead Marines as well as their death.

b. Their tactics directly reflect their purpose. The Martyrs will make fortified fighting positions in houses and wait. Marines will come, they will fight, and they will die in place.

16. Both the Guerillas and Martyrs employ the same weapons. The weapons used are mostly small arms, grenades, and rocket-propelled grenades. The Martyrs have used heavy machine guns and anti-air machine guns, unfortunately, with good effects.

17. The battle positions and tactics that they both employ are somewhat similar. The major differences between the two are the egress route and the fortifications. Guerrillas have an evasion plan, while the Martyrs do not. The Guerrillas normally do not have fortified positions.

18. Marines have been engaged from mouse-holes within the house, Guerrillas shooting down from the rooftops when they are moving into the courtyard, Guerrillas and Martyrs shooting and throwing grenades down the ladderwells, in second deck rooms that are fortified or blacked out, and upon breaching of interior doors. Martyrs have emplaced machine gun positions in rooms facing down the long axis of hallways.

19. The egress routes the Guerrillas use are preplanned and well-rehearsed. They move in groups and withdrawal perpendicular to Marines' forward line of own troops (FLOT). Their movement is through windows of houses, down back alleys, and from roof to roof (only when obscured from Marine overwatch positions). The routes minimize exposure in the streets. Escape routes do not cross streets that run perpendicular to the FLOT, only parallel. This is done because Marine snipers during 2nd Battalion/1st Marines' (2/1) attack last April devastated the insurgents when attempting to cross those streets. If contact is made with Guerrillas and the block is not isolated on all four sides then their chance of escape increases exponentially. Isolation of the block is absolutely necessary in order to prevent any 'squirters'.

20. Overall, the enemy has adapted their tactics and techniques in order to maximize their strong points and hit Marines when they are the most vulnerable. They have learned from 2/1's attack last April. This is common sense, but it must be said in order that Marines realize the enemy they are fighting is somewhat intelligent. In MOUT it only takes a miniscule amount of intelligence in order to create massive amounts of casualties.

Squad Tactics

21. **Movement.** During house to house detailed clearing attacks, squads must minimize exposure in the streets. The streets, especially in Fallujah, can become a death trap if a squad is engaged. The squad should run from house to house in a stack with all elements (security, assault, and supporting) in their appropriate position. In the street the stack should be slightly staggered like a tight tactical column. The Marines should have some dispersion, and the pace of the running should not be so fast that the Marines are uncontrolled and not maintaining all around security. As soon as the point man/one man reaches the courtyard breach the stack should close the gaps of dispersion and swiftly move to accomplish their tasks.

22. All danger areas while on the move must be covered. Security must be three-dimensional and all around. Each Marine in the stack looks to the Marines to his front, assesses danger areas that are not covered, and then covers one of them. If every Marine does this then all danger areas will be covered.

23. **Top Down Verse Bottom Up Assaults.** An infantry squad can assault structures using two different methods. Traditionally, the top down assault is taught as being the most ideal method for clearing a structure. Realistically, this may not be the best option for the infantry squad. Below are the advantages and disadvantages of both top down and bottom up assault methods.

24. The advantages and disadvantages of top down assaults are as follows:

a. Advantages:

(1) Surprising the enemy by moving from the top down may throw the enemy off balance. The enemy's defenses may not be prepared for a top down assault and the squad could overwhelm the enemy rapidly.

(2) The squad has more momentum when moving down the ladderwells.

(3) If the squad knows that the enemy is inside the roof can be breached in order so grenades and explosives could be dropped on top of the enemy.

(4) The enemy's egress routes are greatly reduced because the squad can isolate the house by holding security on the back alleys and the front of the house from the roof.

b. Disadvantages:

(1) Once the squad makes entry and contact is made, pulling out of the structure is extremely difficult. This limits the options for the squad leader on how to engage the enemy. The structure must be flooded and Marines have to go overtop of casualties in order to kill the enemy. Momentum must not be lost. Marines have been left behind in houses because the momentum was lost.

(2) If the squad decides to break contact they are moving opposite of their momentum and more casualties will result.

(3) Marine squads may not have enough Marines to effectively flood the structure.

(4) If casualties are taken they are nearly impossible to pull up the ladderwell with all their gear and a

limp body. This is another reason why the structure must be flooded.

(5) The casualties will not receive the immediate first aid because the entire squad must be committed to neutralization of the threat. The swiftness of medical attention may mean the difference between life and death.

25. The advantages and disadvantages of bottom up assaults are as follows:

a. Advantages:

(1) The squad leader has a slew of options when contact is made. The structure does not have to be flooded.

(2) Momentum can be maintained in assaulting or breaking contact and the squad leader can switch rapidly from one to the other relatively quickly.

(3) The structure can be cleared with fewer Marines because the clearing is more controlled and smooth whereas top down is always in high gear.

(4) Casualties can be pulled out faster and easier simply because gravity is working for the squad.

b. Disadvantages:

(1) The squad is moving into the enemy's defenses. It is easy for the enemy to hold the second deck and ladderwell.

(2) The squad is slow moving up the ladderwell which makes it harder to maintain momentum.

(3) The enemy has the ability to escape by using its preplanned routes.

26. Overall, there should not be a standard assault method. Rather the squad leader should understand the advantages and disadvantages of each, assess each structure quickly, make a

decision on which method to employ, and then take actions that maximize its advantages while minimizing its disadvantages.

27. **Gaining Footholds.** Footholds are extremely important. By establishing footholds the squad establishes strong points during the assault that can be used for consolidation, coordination, base of fire positions, rally points, and casualty collection points. The squad must move from one foothold to another, never stopping until each foothold is attained.

28. The succession of footholds that the squad establishes will be different when assaulting from either the top down or the bottom up. The following footholds should be seized in this order when assaulting from the top down:

a. all rooftops,

b. the inside top deck,

c. each individual lower level to the bottom deck, and

d. the courtyard.

29. The footholds seized when assaulting from the bottom up are in the reverse order. They are the following:

a. the front courtyard,

b. the first two seating rooms,

c. the central hallway,

d. each successive upper deck with its respective rooftop, and

e. the uppermost rooftop.

30. At each individual foothold the squad can consolidate and coordinate its further clearing of the structure. If contact is made the footholds can be used to establish a base of fire in order to assault or break contact. When breaking contact they are used as rally points in order for the squad and fire team leaders to get accountability of all their Marines. The squad will bound back through each foothold. A foothold can also be used as a casualty collection point.

Structure Clearing

31. **Types of Entry.** During the assault on a structure there are three different tactics that the squad can use for entry into the structure. The three types of entry are dynamic, stealth, and subdued. The dynamic entry is violently aggressively from start to finish. The commands are verbal and yelled. The squads lead by fire placing one or two rounds in every door that is closed or window that is blacked out. Fragmentation grenades, stun grenades, and flashbangs are used. At night, surefire flashlights are employed in order to clear. The movement of the squad is swift and overwhelming for the enemy inside.

32. The stealth entry is exactly the opposite of the dynamic entry. The squad breaches quietly, moves slowly, speaks only in whispers, and listens for any movement within the house. There is extreme emphasis placed on initiative-based tactics (IBT). During night clearing, NVG and PEQ-2's are used instead of surefire flashlights. The stealth entry confuses the enemy on exactly where the squad is in clearing the house and allows the squad to maintain the element of surprise.

33. Subdued entry is a combination of the two previous types. The squad moves quietly until they encounter a room. Upon entry into the room, Marines are violently aggressive. After the room is cleared, the Marines switch back to the stealth method of entry. This type of entry allows the squad leader to control the rate of clearing while maintaining some element of surprise.

34. It is important to note that squad leaders must vary the type of entry. The squad must constantly mask its movement through every form of deception that may confuse the enemy inside the building or room. It is up to the entire squad to use its imagination and vary their entry tactics and techniques as much as possible. The objective is to keep the enemy off balance and not allow him to get into the squad's rhythm.

35. **Breaching.** There are three types of breaching that were used in Fallujah. The types of breaching are mechanical, ballistic, and explosive. Mechanical breaching of the exterior walls of the courtyard or gate was mostly done by amphibious assault

vehicles, tanks, D-9 bulldozers or HMMWV. Sledgehammers and hooligans were used to breach both the metal and wooden doors of the house, but this was and is not the preferred method for breaching. Sledgehammers and hooligans are slow and they require the breacher to stand in front of the door being breached. Obviously, standing in front of the door allows the enemy to engage the breacher through the door.

36. Ballistic breaching was used mostly on exposed padlocks. Both M16A4's and shotguns were used. The M16A4's were employed because there was not enough shotgun ammunition for the amount of locks that had to be breached. They were fairly effective on first round breaching of padlocks if the round was placed near the center. The M203 was also used for breaching. Squads would breach doors of houses that were 50 to 100 m in front of their position with the M203. It worked extremely well on the exterior metal doors.

37. The last type of breaching employed was explosive. A multitude of charges were used in order to breach walls, gates, exterior doors, and interior doors. Some of these will be discussed later in this evaluation.

38. An important principle in breaching that was learned is the Marine making entry is NEVER the breacher. The breacher should always fall in the back of the stack and never go in first. Marines have died because they followed their own breach.

39. Speed is the most significant factor in all types of breaching. If one method of breaching is not working then the breacher must quickly transition to a different type. Standing in front of a door and beating it with a sledgehammer for 10 minutes is unacceptable. The breacher must be able to employ different methods. The squad leader must ensure that the breacher has the necessary equipment and explosives for each method. Every time the squad is stalled because of a breach it is placed in a vulnerable position. Breaching swiftly and effectively is necessary in order for the squad to maintain momentum.

40. **Movement of the Squad within the Structure.** Within the structure the squad should move from one foothold to another.

The initial foothold is established by the security element. The security element rolls into the courtyard or rooftop and clears every room on the outside. The assault element proceeds directly to an entry point to prepare for the breach. The support element falls in trace and makes the breach.

41. After the breach is made the assault element makes entry and clears the first two sitting rooms simultaneously by splitting the stack or clears the entire top deck. The support element will assist the assault element by peeling off and clearing rooms or breaching any doors. Security will be left at the courtyard or rooftop foothold in order to isolate the structure and secure the squad's egress route. Security can be maintained by only two Marines. The rest of the security element will fall in the stack.

42. After the initial foothold in the structure the stack will consolidate and then advance and clear to the next foothold. The succession will continue until the entire structure is cleared.

43. At all times the squad will move by using IBT and adhere to its principles which will be addressed later. No Marine should make an uncovered move. The squad should move at a pace that is swift, but controlled, exercising 'tactical patience'.

44. **Actions Upon Enemy Contact.** The squad leader's options for actions upon enemy contact vary according to where the squad is in its clearing and whether any casualties have been taken. In any contact, the squad and squad leader have two priorities. The two priorities are eliminating the immediate threat (IT) and pulling out any casualties. More often than not, the two priorities are connected because in MOUT the enemy is usually close (within feet) and the enemy fire has wounded a Marine.

45. If contact is made in the courtyard or rooftop the squad should break contact, isolate the house or block, and call in supporting arms (tanks, tracks, etc.). There is no reason to place Marines into the building until it is thoroughly prepped.

46. If contact is made in the house then the squad leader must quickly evaluate the situation and decide the best course of

action. Generally, the squad leader has the following three options:

a. *Break Contact.* Breaking contact is more of an option during the bottom up assault because of the difficulties in changing the momentum during the top down assault. If casualties are taken or the enemy resistance is strong then this may be the best action for the squad leader to take. Upon breaking contact the squad will bound from one foothold to another getting accountability of all Marines and ensuring that no Marine is left behind. When leaving the house the squad can place a satchel charge or another explosive device in order to bring down the house or burn the enemy out.

b. *Flood the House.* Squad leaders may choose to flood the house with Marines if a casualty is taken during the top down assault or if the enemy threat is not significant. Casualties cannot be dragged up the stairs quickly, therefore, Marines must neutralize or suppress the threat in order to extract the casualties. In some situations the only way to do this may be to flood the house.

c. *Hold the Last Foothold and Clear by Fire.* Footholds are strong points where the squad can fight from. At the foothold Marines can return fire, throw grenades, and use explosive devices to neutralize the enemy. After the enemy has been damaged the squad can move in and clear the house. If the rooftop is the foothold the squad is holding, then the roof could be breached by a directional charge. Grenades or incendiary devices can be thrown into the structure flushing out the enemy.

47. CASUALTIES MUST NEVER BE LEFT BEHIND! The squad leader must ensure that every Marine moves with a buddy. Each buddy is responsible for pulling the other out of the fight if he goes down. The squad leader and fire team leaders must have accountability for all their Marines at all times. There is no excuse for Marines being left behind in a building while the squad pulls out.

48. Organisation of the Squad. Some squad leaders in the battalion split their squads in two and assigned different sectors to the two different parts. They did this to move faster through the houses because they were tasked with clearing a lane that may have contained up to fifty or sixty houses. Although this worked and the squads moved faster through their assigned sector it is not the best employment of their squad. The following reasons are given on why splitting the squad is not advisable:

a. If the squad contained twelve Marines and is split in two that leaves two teams of six Marines. Clearing a structure with six Marines, even though the house is small, is extremely risky. If a buddy team of two Marines got hit and went down there would not be enough Marines to provide covering fire while pulling the casualties out. Critical seconds would be wasted waiting for the other team of the squad to come in the house and support the extraction of the casualties. The chances of wounded Marines getting left behind increases exponentially.

b. If contact is made by both teams simultaneously then the squad could be cut down in a piecemeal fashion within a matter of seconds before other squads could even move to reinforce.

49. When the squad leader organizes his squad he must think about enemy contact always. Squads must not be split in order to increase the speed of clearing. Commanders should not put stress on the squad leaders to clear at a speed that would force the squad leaders to split their squad. Tactical patience must be exercised at every level.

50. The squad should be organized by using the traditional three elements of assault, support, and security. The amount of Marines contained within each element will vary according to the squad's number of Marines, the skills and abilities that each individual Marine possess, and the weapons systems that each Marine employs (M249 SAW, M203, and ACOG scoped M16A4's).

51. The assault element must contain no SAW if that is possible. A SAW gunner must never clear rooms. The assault element should contain the most number of Marines because every room must be cleared with two Marines. The support element will supplement the assault by falling in the stack and peeling off to clear rooms.

52. Support should include any engineers or assaultman attached to the squad. A SAW gunner should be included in this section in order to provide massive firepower in the house if contact is made. The corpsman is also located in support because he can use his shotgun to breach as well as provide quick medical attention to casualties. The support section will fall in the stack behind the assault element to assist in any way.

53. Security should contain the other remaining SAW in the squad. The security element is responsible for clearing and securing the courtyard or rooftop foothold prior to the assault element moving to the entry point. When assault and support make entry into the structure, two Marines are left behind to isolate the house (rooftop) and secure the squad's entry point. The rest of the Marines will fall in the stack behind the support section. The security Marines will hold security on all danger areas (mostly the stairs) when the assault and support are clearing each foothold.

54. Squad leaders must appoint each fire team leader as an element leader. There are no longer fire teams, only assault, support, and security sections. Each element leader will maintain accountability for his section. It is easier for the squad to maintain this organization until the attack is completed and then the traditional four-Marine fire team can be reinstated. The squad leader should emphasize unity of command and succession of command should the squad leader become a casualty.

55. Squad Communications. Inter-squad communication between the Marines in the stack is both verbal and visual. Simple, clear, and universal language should be used. Universal language is words and phrases that are standardized

so every Marine understands the other. Words and phrases such as, 'hold right, clear left' and 'frag out'.

56. The one man should describe to the stack what he is seeing. In other words, the one man verbally paints the picture for the stack behind. Marines in the stack should be listening not talking. Talking should be kept to a minimum.

57. **After Clearing – Continuing Actions.** After the structure has been cleared the squad must immediately conduct the detailed search of the house for weapons. The search must be quick but thorough leaving nothing untouched. Weapons were found in every conceivable place, underneath couches in the cushions, in between piled up blankets, etc.

58. Another continuing action would be to render the interior and exterior doors unable to close. This will help if the structure needs to be recleared later. Marines will use their creativity to think of ingenious ways to accomplish this task.

59. **Mission or Time has Priority.** In detailed clearing attacks, time should never be the priority. Marines should never be rushed because they become sloppy and are forced to create shortcuts in order to accomplish the mission under the time restraints. This does not mean that the squads shouldn't be pushed. This means that a realistic timeline for the attack should be made; a timeline that takes into account the overwhelming task of clearing multiple blocks of houses that may contain platoon sized elements of insurgents.

Individual Techniques and Tactics

60. **Training.** Training is continuous, whether in a combat zone or not. The responsibility of the squad leader is to ensure his squad is combat ready. The individual Marines in his squad must be continuously trained otherwise the Marines will lose proficiency in MOUT skills learned through experience during the attack.

61. Training does not have to be physical, it can be verbal. The most effective training in this environment is for the squad leader to sit down with his squad and talk. The squad should

run through combat scenarios and have individual Marines tell the squad what their jobs are and how they will do it. Communication between Marines can be practiced by talking through universal language such as, 'Open door right, closed door left' or 'Peel right', and telling each other what is meant.

62. All Marines must exercise initiative during combat. Squad leaders must design training techniques in order to stress initiative. Marines must be able to look around, assess what his squad or partner is doing, feed off it, and act in order to support them. Initiative based training is paramount.

63. Constructive criticism should be encouraged. Every Marine debriefs each other, telling good and bad observations. The squad leader will also be critiqued by his Marines in an appropriate fashion. The criticism is not meant to undermine the squad leaders' authority. It is to allow the squad leader to instruct the Marines on why he chose to run the squad the way he did. Young Marines will gain knowledge about squad tactics that they may never have figured out if the squad leader did not tell them. It will prepare them for leadership billets. It will also give them confidence in their squad leader because they will trust him and his knowledge.

64. **Techniques.** Techniques that individual Marines need to be taught and practiced are the following:

a. All danger areas are to be pied off. Even before entry into a room as many danger areas as possible should be pied off leaving only one or two corners that need to be cleared. Don't blindly rush into a room, especially if the door is opened.

b. Use the buddy system. Two Marines always peel off the stack, never one.

c. Picking up uncovered danger areas, including when opening doors to furniture when it can fit a man inside.

d. Clearing obstacles, such as furniture.

e. Prepping rooms with grenades.

f. If the room is too small for two Marines or not enough Marines are clearing the house to hold security on all the danger areas, the two-man turns around and covers the rear of the Marine clearing the room.

g. Moving stealthily through a structure even with broken glass on the ground.

h. Making a stealth entry with NVG and PEQ-2s.

i. Making breaching charges and placing them on the locking points of different types of doors.

65. These are just some of the techniques that need to be practiced and passed on to junior Marines.

66. **Tactics.** IBT should be taught. There are four rules of IBT. They should cover the following:

a. Cover all immediate danger areas.

b. Eliminate all threats.

c. Protect your buddy.

d. There are no mistakes. Every Marine feeds off each other and picks up the slack for the other. Go with it.

67. Every Marine needs to understand and memorize the rules governing IBT. These rules should not only apply to MOUT, but all small unit infantry engagements. Rule number four must be pounded into the squad. There are no mistakes when clearing a structure in combat, only actions that result in situations; situations that Marines must adapt to, improvise, and overcome in a matter of seconds.

Supporting Arms

68. Throughout contemporary American military history there has not been any opponent that could not be overwhelmed by American supporting arms. The USMC has historically been an innovator with the employment of supporting arms. The Marine Corps created the concept of CAS in Haiti during the Banana Wars, helicopter envelopment in Korea, and the combined arms team portrayed in the modern Marine Air Ground Task

Force. Fallujah has been another proving ground for American supporting arms. The insurgents were completely overwhelmed by the massive indirect fires and close air support on the first two days of the battle.

69. At the squad level the results of the fires were felt through the type of enemy they encountered. The enemy dug in deep into the houses, not allowing themselves to get caught in the open. The infantrymen of 3/5 have learned the advantages and disadvantages of fixed-wing CAS, rotary-wing CAS, tanks, combined anti-armor team (CAAT), amphibious assault vehicles, artillery, bulldozers, and 81 and 60 mm mortars through practical experience.

70. Fixed-wing CAS is an enormous weapon that has great effects on the ground. The major problem with it is the amount of time it takes to get bombs on target. It took entirely too long for bombs to be dropped when Marines were in contact. The minimum safe distance of the ordnance was too great in order for even the block to be isolated and that allowed the enemy to escape countless times. Fixed-wing CAS should be used for deep targets. It should not be used when Marines have isolated the structure and trapped the enemy inside. A tank or CAAT section can be more effective. Marines do not have to be withdrawn from the cordon.

71. In contrast to fixed-wing CAS, rotary-wing CAS was extremely timely, but the effects on target were not extraordinary. The hellfire missiles used did not bring down entire structures, but they did do some damage.

72. By far the best two supporting arms used were tanks and CAAT. Tanks and CAAT were the infantryman's best friend. The battle would have been incredibly bloodier if it hadn't been for tanks and CAAT. The tanks were able to provide a 120 mm direct fire weapon on-the-spot of any contact within a matter of minutes. The thermal sites were able to pinpoint exact position of snipers and then effectively neutralize them within seconds. CAAT was able to use its M2.50 caliber machine guns and Mk 19 grenade launchers to breach as well as destroy buildings where fire was received from. CAAT also helped the

squads by clearing the buildings that lined the street in their lane. The infantry should never attack in MOUT without tanks or CAAT.

73. Mortars and artillery proved effective by forcing the enemy to stay in the houses and not allowing the enemy to fight the Marines in the streets.

Demolitions

74. The variety of explosives used during the fight for Fallujah will not be mentioned here. The few that will be explained have a common theme of being obscure and may be forgotten if they are not written down. Each explosive device was developed in response to the enemy's tactics and has been proven to work.

75. The following is a list of explosives, a description, and their uses:

a. 'Eight Ball' – 1/8 stick of C-4 – Used for breaching both interior and exterior doors, effective and doesn't use a lot of C-4.

b. 'House Guest' (Named by 2nd squad, 1st platoon, I Company) – Propane tanks placed in the central hallway with C-4 used to ignite it, creates a fuel-air explosive – Used for bringing down a house when contact is made inside, propane tanks must be full.

c. A 60 or 81 mm WP mortar round, wrapped three times with detonation cord and a 1/4 or 1/2 stick of C-4 – Used when contact is made in a house and the enemy must be burned out.

d. Molotov cocktails – one part liquid laundry detergent, two parts gas – used when contact is made in a house and the enemy must be burned out.

76. All Marines should be familiar with explosives and proper placement of the charge for breaching. Any Marine should be able to cut time fuze, crimp a blasting cap, and put the blasting cap in C-4.

Randomness of Tactics and Techniques

77. The infantry squad must have a tool box of tactics and techniques. The squad should not fall into a pattern where they become predictable. Being predictable allows the enemy to prepare and modify his tactics in order to exploit the squad's weaknesses. The squad must be trained well enough to flow through or combine each tactic and technique fairly easily. Marines must use their imagination to think of ways to vary their tactics. The enemy must be kept off balance by changing, at random, squad tactics. For instance, vary the method of entry into the structure, lead by fire then don't, assault top down then bottom up, don't use the same entry point every time, throw a fragmentation grenade on the middle roof then assault bottom up. Avoid patterning by all means.

Combat Mindset

78. Preparing Marines for battle is a difficult task for the squad leader. Squad leaders must be the rock and drill into his Marines that no Marine will be left behind. Marine combat infantrymen understand the meaning of *Semper Fidelis*. No Marine is left behind.

79. Marines have to prepare mentally for casualties and be able to rebound quickly in order to kill the enemy swiftly to prevent more casualties. The old saying 'Anything that can go wrong, will', is always in effect in combat.

80. Every time a squad makes entry they should expect to make contact. Surprise, speed, and maximum violence wins small unit battles. Marines and leaders need to make quick decisions on the move and under fire, always remembering unity of command.

81. In combat, Marine leaders are required to stand up and take charge. Unfortunately, sometimes there are too many chiefs and not enough Indians. The 'chief syndrome' will create mass confusion on the battlefield. Being a good combat leader sometimes means stepping back and allowing the Marines to do their jobs. Platoon commanders must allow squad leaders to lead their squads, squad leaders must allow element leaders

to lead their elements, and element leaders must allow their Marines to take initiative.

Conclusion

82. This evaluation is nothing more than a guideline for infantry Marines. Squad leaders should take this evaluation, study it, critique it, give it to their squad, have them study it, critique it, and then sit down together to discuss it. The tactics and techniques contained in the evaluation were gained at an enormous price. Marines were killed on the field of battle developing these tactics. It is the duty of every Marine infantryman to not allow these lessons to die with time. This evaluation is only one step in passing on the knowledge.

CHAPTER 2

FUNDAMENTALS OF URBAN CLOSE COMBAT

Accustomed to fighting in the sparsely populated country side of I Corps, the young marines who had not been in Korea had to learn the tactics of urban fighting on-the-spot. Supported by mortars, recoilless rifles, machine guns and tanks, ten- or eleven-man fire teams spearheaded the assaults.

'Four men cover the exits of a building, two men rush the building with grenades, while two men cover them with rifle fire' explained Lieutenant Colonel Earnest C. Cheatham, Commander of the 2nd Battalion, 5th Marines. 'We hope to kill them inside or flush them out for the four men watching the exits. Then, taking the next building, two other men rush the front. It sounds simple but the timing has to be just as good as a football play.'

... by the end of the first week of fighting, the marines had managed to secure less than half of the south bank while suffering some 250 casualties.[1]

SECTION 2-1. INTRODUCTION

2.1 Historically, urban combat has been intense and close in nature, with success going to the force that recognised and adapted its procedures and equipment to address the complications of urban terrain.[2]

2.2 Two significant aspects of urban terrain are the complex physical characteristics of buildings and infrastructure and the diverse range of human activity that routinely occurs in urban

1. Dougan, C. and Weiss, W., *The Vietnam Experience: Nineteen Sixty Eight*, Boston Publishing Co, Boston Massachusetts, 1983, p. 28.

environments. These aspects impact on friendly force operating procedures and equipment by LOS and ROE. This complicates reconnaissance, targeting and surveillance, and severely restricts situational awareness and, therefore, C2.

2.3 This chapter describes the fundamental skills specific to combat in urban environments, in particular the following:

a. equipment handling,

b. shooting and weapon-handling techniques,

c. urban combat skills,

d. individual fire and movement,

e. team and section movement,

f. team fire and movement,

g. personnel handling, and

h. casualty procedures.

SECTION 2-2. EQUIPMENT HANDLING

2.4 The mobility, agility, firepower and sustainability of a force are largely controlled by the equipment and combat supplies it carries. The standard mix of combat loads that soldiers are asked to carry will vary for UO because of the need to carry substantial amounts of additional ammunition and special equipment. It is essential for UO that all soldiers train with the correct equipment, from the use of eye protection through to the wearing of helmets and body armour. This will ensure that

2. For extra information on the proximity and intensity of urban warfare combat, see the article: Cowell, A., 'A Nation at War: House to House; Part of an Underdog's Down-to-Earth-Arsenal', per the *New York Times*, 17 August 2003 at http://www.nytimes.com/2003/03/27/world/nation-war-house-house-urban-warfare-long-key-part-underdog-s-down-earth-arsenal.html, accessed 24 January 2013.

combat effectiveness is achieved. This section covers the following areas:

a. equipment carriage;

b. personal protective equipment;

c. C2 equipment;

d. the individual carriage of weapons, equipment and ammunition; and

e. water and food.

Equipment Carriage

2.5 Packs increase the profile of individual soldiers and should be reduced as much as practicable. The carriage of weapons and equipment by an individual while operating in the urban environment is not only tiring but also difficult. Commanders must ensure that soldiers carry only mission-essential equipment, particularly during assaults where teamwork is critical. Supporting troops can carry the greater part of the load requirement until the task is complete. Unnecessarily bulky loads will become physically limiting. Soldiers carry a full load in or on their personal load carrying equipment (PLCE). A further quantity of ammunition may be carried in clothing pockets or webbing. Essential additional stores and ammunition are carried in patrol or day packs. To reduce the profile of the pack, commanders may need to distribute stores by priority into alternative carrying equipment.

Personal Protective Equipment

2.6 The physical harshness of the urban environment and the hazards of fighting at very close quarters demand strong protective clothing and the use of any additional protective equipment that is available. Clothing should be durable and strong enough to enable soldiers to move and make significantly better use of cover without sustaining minor injuries. Hearing and eye protection should be worn to prevent hearing loss and eye injury. Helmets and body armour must be worn to reduce the risk of head and body injuries.

Command and Control Equipment

2.7 C2 may be enhanced by the following devices:

a. *Communications.* Standard VHF radio equipment is often heavily screened in the urban environment and is larger and bulkier than that required for short urban ranges. Police and industry use compact UHF radio sets. While LOS will inhibit all communications equipment, UHF is generally more suited to urban terrain. If available, such equipment should be issued down to the individual/half-section/fire team (FT) level. These sets are carried in purpose-built pouches and fitted with small plug-type earphones. Line systems offer reliable and secure communications and may be used by untrained troops from field telephones connected to portable dispenser wire packs. To pass key information visually, signal flares and coloured smoke may be carried. Communications will be problematic and consideration must be given to alternative means, both retransmission and physical links such as runners.

b. *Marking Equipment.* Marking aids are used extensively to mark routes, force progress, booby trapped areas and arcs of fire, and to convey other information during UO. Their use is covered in Chapter 3 but some common equipment is:

(1) marker panels, ‘wolf tails’ and flags;

(2) chalk, marker pens and spray paint;

(3) lamps, torches, strobes and laser pointers; and

(4) mine tags, mine-marking tape, string and signal wire.

c. *Recording and Coordination Equipment.* Recording and coordination equipment is used for briefing subordinate

commanders, support weapon crews, snipers and FT. The following equipment may prove useful:

(1) *Digital Cameras.* Cameras can provide precise information on targets and objectives during planning and briefing activities.

(2) *Video Cameras.* Video cameras can be used by reconnaissance patrols to record information and by subordinates to brief commanders.

(3) *Observation and Rangefinding Equipment.* Locating enemy positions and detecting targets often requires optical aids. Binoculars are issued down to section level. Secure observation over the sharply defined edges of the most common forms of cover frequently requires the use of periscopes or mirrors. Simple field improvisations can be constructed using a tube and two small mirrors. More effective devices may be manufactured by workshop personnel.

(4) *Illumination Equipment.* Illumination may be required by day, or particularly by night, in unlit buildings or underground structures. Pyrotechnic methods include thrown trip flares, parachute flares fired horizontally and projected flares.

Individual Carriage of Weapons, Equipment and Ammunition

2.8 The individual load carriage is the equipment and ammunition required by the soldier to operate successfully in the urban environment and includes the following items:

a. PLCE,

b. weapon and ammunition,

c. water and food,

d. first aid kit, and

e. radios.

2.9 Personal Load-carrying Equipment and Body Armour. PLCE must be adjusted to fit body armour. It may be necessary that PLCE be worn low under the body armour or without shoulder straps. For some operations, some of a soldier's load can be carried in pockets, allowing a minimum number of pouches to be carried on the pistol belt. Basic webbing may be modified to suit the mission or specialist PLCE may be issued.

2.10 Suggested Items. The following suggested individual and section equipment may be carried for use in the urban environment:

a. *Individual Equipment.* This includes:

(1) *Combat Knife.* If a combat knife is worn low, the scabbard should be taped to avoid noise during movement and to prevent injury to the thigh caused by the point of the weapon. The combat knife may be attached to various points on PLCE. It can be used for prising open doors and windows, levering locks and cutting light to medium gauge wire.

(2) *Toggle Rope.* A toggle rope is carried as a climbing and lifting aid. It may also be used in securing improvised stretchers.

(3) *Entrenching Tool.* The entrenching tool may be used as a shovel, pick, lever or improvised club.

(4) *Field Dressing.* The field dressing is used for personal and buddy aid in the treatment of gunshot wounds, burns and blast injuries.

(5) *Tourniquet.* Tourniquets are used to stem the flow of uncontrolled bleeding and may be fabricated from straps and simple ratchet devices.

b. *Section Equipment.* This includes:

(1) *Picks and Axes.* Picks and axes are used for digging and for breaching walls, floors, roofs, locks and hinges.

(2) *Shovels.* Shovels may be needed to remove glass from windows, to chop thin panels, to move spoil and to dig holes.

(3) *Crowbars.* Crowbars are used to open access covers and to lever doors, windows and roof slates.

(4) *Wire and Bolt Cutters.* Wire and bolt cutters are used to cut locks, mesh fences and the reinforcement bars in damaged concrete.

(5) *Saws.* Small hand or folding saws have many uses but are particularly useful in preparing improvised ladders from timber.

(6) *Rope.* This rope (30 m for subterranean use) has figure-eight knots tied at 12 m and every subsequent 7 m. It may be secured to the members' bodylines by means of a karabiner.

(7) *Section First Aid Kit.* The list of contents will normally be dictated by the regimental aid post staff.

c. *Manual Entry Gaining Tools.* All uses and techniques of these tools are explained in further chapters:

(1) *Access Cover Keys.* Access cover keys are used for entry to underground systems, especially where there are security mechanisms in the access hatches.

(2) *Reaming Tool.* Reaming tools are bars or pipes used to ream glass in windows. They are fitted with scabbards or disc shields to protect the user from falling glass.

(3) *Rams.* Rams are heavy poles with handles used to smash doors.

(4) *Hydraulic Jack.* Hydraulic jacks are used to open doorframes or reinforced doors.

(5) *Hooligan Tools and Power Tools.* These tools can breach doors, walls or other obstacles.

2.11 Weapon Slings. Slings should always be worn on personal weapons during UO; however, the type of sling system and method of use will change to suit the firers' preference and tasks to be performed. There are three main methods of slinging the weapon (see Figure 2–1), as follows:

a. *Conventional Loop.* This method offers the advantages of allowing the weapon to be easily removed for movement in confined spaces and allows the weapon to be quickly swung to the rear during obstacle crossings.

b. *Close Quarter Battle Loop.* The close quarter battle loop allows the user to conduct weapon changeover drills; however, it can restrict movement when carrying out conventional fire and movement and makes the weapon difficult to remove quickly.

c. *Three-point Sling.* The three-point sling offers all the advantages of the close quarter battle loop; however, the weapon can be easily removed or slung and the sling can be quickly extended for fire and movement.

c.

b.

a.

Figure 2–1: Slinging Methods

2.12 Grenades. Provision should be made for the carriage of additional grenades, as consumption rates will usually be high.

2.13 M18 Claymore. The M18 Claymore can be used as an improvised satchel or breaching charge, as well as in the defensive role.

2.14 40 mm Ammunition. Provision should be made for the carriage of additional 40 mm ammunition, as consumption rates will usually be high.

2.15 Small Arms Ammunition. As a minimum, first line scales of small arms ammunition are carried in magazines, one of which is filled with tracer rounds for target indication.

2.16 Self-loading Pistol. The self-loading pistol should be issued at FT or section level to provide for confined space and subterranean clearance.

2.17 Distraction Devices. These should be carried to enable users to easily access them and not confuse them with HE grenades.

2.18 66 mm Light Direct Fire Support Weapon. The LDFSW can be carried slung with velcro loops securing it to the webbing harness to prevent movement. If this method of carriage is used, the metal strap in the sling should be taped to the launcher body, and the sling should be replaced with a nylon strap and the cover release pin secured in place with an elastic band. Alternatively, the launcher can be carried in a purpose-built pouch secured to the webbing. This method will also reduce noise. If bulk launchers are to be carried, they should be placed in a suitable raid pack.

Water and Food

2.19 Water consumption increases during urban combat due to the high levels of exertion and the dusty conditions. Potential exists for water to be locally obtained in the urban environment. It is essential that water supplies are tested. Food and water should be carried in accordance with unit SOP.

SECTION 2-3. SHOOTING AND WEAPON-HANDLING TECHNIQUES

2.20 To effectively use small arms in urban combat, soldiers do not necessarily need to acquire new skills but rather may be able to refine the existing ones. The following are examples of the effective use of small arms:

a. *Accuracy.* Rarely will a trained enemy present a full body target picture. Most targets will be well concealed, behind cover and ill-defined. In such circumstances, only first-class battle shots will be consistently successful.

b. *Muzzle Clearance Sensing.* Many firing positions will be set back from hard cover. Firing will take place over this cover. The estimation of muzzle clearance must be taught and practised, particularly in relation to the use of optical sights.

c. *Alternate Shoulders.* Soldiers have a marked advantage if they can accurately shoot using both shoulders. This skill increases the amount of cover that can be used to fire aimed shots without exposing the firer.

Shot Placement

2.21 In room clearing, enemy soldiers must be incapacitated immediately. Shots that wound or are mortal but do not incapacitate the target instantaneously are better than misses but may allow the enemy to return fire. While a solid head shot is expected to immediately incapacitate the enemy, a target area of 12 by 20 cm may be difficult to hit when moving rapidly in a low crouch position.

2.22 Members of clearing teams should concentrate on achieving solid, well-placed shots (controlled pairs) to the upper chest, then to the head (see Figure 2–2). This shot placement increases the probability of a first-round hit and allows for a second-round incapacitating shot. This engagement technique is more reliable than attempting head shots only and is easy for

soldiers to learn, having been taught previously to aim at the centre of mass.

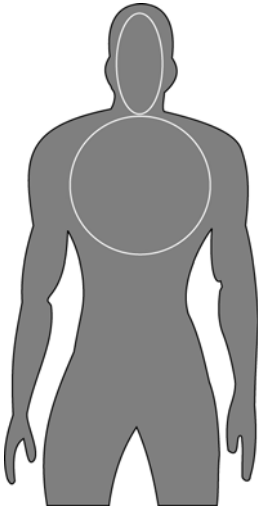


Figure 2–2: Lethal to Incapacitating Shot Placement

2.23 The employment of the main types of infantry weapons and ammunition natures, how each is used, special limitations and the additional purposes for which a weapon may be employed are detailed as follows:

a. *Pistols.* Pistols are employed for self-defence, backup and the clearing of very confined spaces. Although fast and effective in skilled hands, pistols require progressive levels of training in handling and firing.

b. *Shotguns.* Shotguns are very lethal over short range, with a reduced public profile and a small risk of overpenetration. Loaded with special-purpose, high-density, frangible rounds (Hatton cartridges), shotguns are capable of stripping away door locks and hinges with a relatively limited hazard to those in the room behind.

c. *Rifles and Assault Rifles.* Bull-pup configuration rifles may be fired around cover from offhand shoulders. This requires techniques that avoid any risk of injury to the face by the ejected case. It should be noted that for most firers the ejected case would not strike the face with force (in any case eye protection should be worn). In an emergency, the risk is acceptable. The following techniques may be used:

(1) *Alternate Shoulder.* The rifle is held in the usual manner but presented to the opposite shoulder (offhand) and eye. The arms are well-extended and the weapon braced against the arm. Cover is used for support. The weapon is held to keep the ejected case away from the face if necessary by treating the rifle as a pistol.

(2) *Canting.* The rifle is canted over with the ejection port facing towards the ground. The rifle is fired from the offhand shoulder with the inside hand taking an overhand grip from the rear of any monopod/guard grip. The weapon alignment is extended from eye–barrel axis judgement. Canting is illustrated in Figure 2–3.

Figure 2–3: Canting

(3) *Shielding.* The rifle is fired from a normal position with the outside hand on the pistol grip and the inside hand forming a flat shield below the eye. Unless the weapon is rested, this method provides a relatively unstable firing position. Shielding is illustrated in Figure 2–4.

Figure 2–4: Shielding

Grenades

2.24 Grenades are the basic tool of close quarter fighting. They allow attacks on enemy who cannot be seen without risk to the user.

2.25 **Grenade Types.** Several types of grenade are on issue, as follows:

a. *High Explosive Fragmentation.* HE fragmentation grenades are classed as a defensive weapon. They have a danger radius of 30 m but there is a high hit probability only if they detonate close by. They may be used to:

(1) attack enemy in dead spaces close to the user,

(2) neutralise interior spaces prior to assault,

(3) breach minor obstacles, and

(4) set booby traps and delayed reaction devices.

b. *High Explosive Blast.* HE blast grenades are an offensive weapon and contain little fragmentation effect, producing instead a localised blast which will:

(1) neutralise dead spaces prior to assault, and

(2) break doorlocks and hinges to gain entry.

c. *Smoke White Phosphorous Grenades.* Smoke WP grenades are used for screening movement, to deny enemy access and to start fires. They are not normally used to precede assaults because WP creates a severe burning hazard.

d. *Smoke Grenades.* Non-bursting smoke grenades are used to:

(1) screen movement,

(2) drive the enemy from enclosed spaces by local obscuration, and

(3) precede assaults where the enemy may be using thermal vision equipment.

e. *Smoke Irritant.* Smoke irritant grenades (using CS/CN gas) are used to:

(1) drive the enemy from enclosed spaces,

(2) precede assaults, and

(3) deny enclosed spaces such as sewers to an enemy not equipped with protective equipment.

f. *Distraction Grenade.* The purpose of distraction grenades is as the name suggests. They use an inner pyrotechnic device that is sometimes reloadable.

2.26 40 mm Grenades. Launched grenades are crucial weapons in providing infantry with the capability of accurate explosive

attack beyond hand-throwing range. The following considerations apply in the use of launched grenades:

a. trajectory clearance,

b. arming distance,

c. fragmentation hazard, and

d. accuracy.

2.27 Illumination. Illumination and signal rounds can be used for target indication to aid coordination or as a deception measure.

Weapon Carriage

2.28 The method of weapon carriage will be dictated by the situation. Figure 2–5 to Figure 2–8 depict the various methods of carriage.

Figure 2–5: High Alert

Figure 2–6: Low Alert

Figure 2–7: Weapon Slung Behind Back

Figure 2–8: Weapon Slung on Front of Body

Close Quarter Shooting Techniques

2.29 If soldiers are to operate effectively in urban terrain, they must be able to rapidly and accurately engage enemy at short range, typically 50 m or less. Constant practising of specialised techniques is required to maintain proficiency.

2.30 Technique. Close quarter shooting techniques allow for quick and accurate engagements at short range and the protection of the body by presenting the combat body armour to the threat. This technique incorporates the method of rapid aimed fire. The basic principles of rapid aimed fire are as follows:

a. instinctively point the weapon at the target, achieving a rapid sight picture;

b. fire accurately at the target using the sight picture; and

c. rapidly re-aim and fire with one or more shots until the threat has been destroyed or neutralised.

2.31 Stance. The weapon is normally carried in the low Ready position with the master hand on the pistol grip, the finger outside the trigger guard and the non-firing hand on the forward handgrip. The safety catch is set to SAFE. The barrel is pointing downwards at a position approximately 10 cm to the front of the firing side of the firer. During range practices, this position is to be adopted on the command ‘LOW ALERT’.

2.32 The feet should be shoulder-width apart. The non-firing foot is slightly forward of the firing foot, normally 5 to 10 cm, and is pointed at the target. The firing foot should be firmly planted for balance and the upper torso leaning forward. The shoulders should be square to the target and the head erect. Most of the weight should be forward to absorb the recoil of the weapon. The knees should be slightly bent so that the firer can move quickly in any direction, using the back foot if necessary. The elbows must be kept tucked in to the side and the stance must be comfortable.

2.33 Aiming. To aim the weapon, raise the barrel to the LOS. As the muzzle approaches the target the safety catch is pushed to FIRE and the finger is moved to the trigger. Both eyes are kept open and the reticule pattern of the sight is aligned with the target. At the same time, the first pressure is taken up on the trigger. During range practices, this will be initiated by the command ‘UP’.

2.34 **Firing.** The sight picture is maintained and positive pressure is applied smoothly and evenly to the trigger until the weapon discharges. The sights are quickly realigned and the firing process is repeated so that two quick shots are fired. This complete procedure is repeated until the target is neutralised.

2.35 **After Firing.** Once the target has been neutralised, the firer should scan the area to the left and right for other enemy, who, if seen, are also engaged. Once all enemy are neutralised, the safety catch is reapplied, the weapon is tilted slightly towards the firer and the ejection opening is checked to ensure that the bolt is fully forward. The magazine contents are also visually checked and the magazine is changed if necessary. The weapon is then returned to the low alert position.

Immediate Action and Stoppage Drills

2.36 Should a stoppage occur, the firer should immediately call 'STOPPAGE' to inform the other team members of the problem. If the enemy is in very close proximity, the best option is to immediately and instinctively attack using the rifle as a weapon. If the enemy is further away, the firer should seek cover while attempting to conduct the immediate action (IA) drill, clear the stoppage or draw their pistol. In order to prevent accidents during range practices, the drill should be restricted to going down on one knee while clearing the stoppage.

Multiple Targets

2.37 When faced with more than one target in close proximity, the firer must quickly decide which target presents the greatest threat and engage that one first. The level of threat can be determined by a number of factors: the type of weapon, distance and the condition of the enemy (eg, an enemy with a rifle may be a greater threat than one with a pistol; however, an unwounded enemy with a pistol may be a greater threat than a wounded one with a rifle).

2.38 Once the threat has been decided, the target is engaged once using the appropriate technique. The shooter then switches immediately to the next target, which is also engaged. The

tendency to watch the target previously engaged for a reaction must be avoided. This is known as target fixation.

Engaging Targets to a Flank

2.39 To engage targets to a flank, the soldier must first look at and identify the target. The next step is to turn towards the target by pivoting on the foot closest to the threat and adopting the correct stance, as previously covered. It is desirable that the feet are placed in the correct position, but this should not be emphasised to the degree that it detracts from the soldier's ability to quickly engage the target. Once aligned with the target, the weapon is raised and the close quarter shooting technique is employed as taught.

Instinctive Firing

2.40 If a target is identified at short range (normally 10 m or less), the quickest method of engagement is by instinctive shooting. Using this method the firer raises the weapon towards the target. As the muzzle approaches the target, the safety catch is pushed to FIRE and the first trigger pressure is taken up.

2.41 The weapon is aimed by quickly looking over the sight until the firer senses that the weapon is aligned, after which the target is engaged with two quick shots. This technique is known as the 'point' method. Good results can be obtained providing that the technique is practised regularly.

2.42 It is extremely important to remember that the range at which instinctive shooting stops and close quarter shooting techniques starts depends entirely on the ability of the individual. This must be determined by constant practice, after which the shooter is responsible for deciding on the method.

Use of the Weapon Torch

2.43 During combat inside buildings, soldiers will often operate in dark rooms or areas. Power to buildings may be turned off, windows may be blacked out, operations may be carried out at night or combinations of these circumstances may occur. If there is no, or little, ambient light in the area, night vision devices may not operate effectively. In this case, there may be

a requirement to use artificial light. Torches mounted on weapons allow the operator full use of the weapon to engage targets as well as illuminating the area.

2.44 **Operation.** In order to prevent compromise by accidental activation of a weapon torch, covers should be fitted for the approach to the target. This will also minimise the chance of reflection from the torch lens. Covers should be removed just prior to H-hour.

2.45 The torch should be turned on prior to entering the darkened area. On entry, a quick sweep of the area of responsibility should be conducted in order to detect any occupants. Positive identification must be made prior to engagement.

2.46 Targets are engaged using the same techniques as for shooting in good visibility. The torch beam is not used to aim the weapon but to allow close quarter shooting techniques or instinctive shooting techniques to be employed.

2.47 **Infra-red Filters.** The torch can be fitted with an infra-red (IR) filter and is then used in conjunction with NVG. This technique is useful for moving through dark areas with no ambient light, such as tunnels, or during the approach. The enemy NVG capability must be considered if torches are being used for this purpose.

2.48 It is possible to use IR torches and NVG during the assault; however, the technique is difficult and tends to slow down movement due to the restricted vision and depth perception. Some NVG may 'white out' due to muzzle flash. Soldiers should at least familiarise themselves with this event for those occasions when contact occurs while wearing the equipment.

SECTION 2-4. URBAN COMBAT SKILLS

2.49 Urban combat skills are the adaptation of fieldcraft skills to the urban environment. Urban combat skills in built-up areas are as important to the survival of troops and equipment as in any other environment. This section covers the individual soldier skills required to operate in the urban environment.

Camouflage and Concealment

2.50 Only sufficient material needed for camouflaging a particular position should be used, as excess material could reveal the position. Urban camouflage material can be used to great effect, but has to be pinned down securely to prevent creasing or a billowing effect. Material has to be obtained from a wide area. For example, if defending a masonry block building, do not strip the front, sides or rear of the building to camouflage the position.

2.51 Buildings provide numerous concealed positions. Armoured vehicles can often find isolated positions under archways or inside small industrial or commercial structures. Thick masonry, stone or brick walls offer excellent protection from direct fire and provide concealed routes.

2.52 After camouflage is completed, the soldier should inspect a position from the enemy's viewpoint. The soldier should make routine and periodic checks to see whether the camouflage remains natural looking and actually conceals the position. If it does not look natural, the soldier should rearrange or replace it.

2.53 Positions have to be progressively camouflaged as they are prepared. Work should continue until all camouflage is complete. If the enemy has air superiority, work may be possible only at night. Shiny or light-coloured objects that attract attention from the air should be hidden.

2.54 **Use of Shadow.** Buildings in built-up areas throw sharp shadows, which can be used to conceal vehicles and equipment. Soldiers should avoid areas that are not in shadows. Vehicles may have to be moved periodically, as shadows shift during the day. Emplacements inside buildings provide better concealment.

2.55 Other features of shadows that can have useful military application are as follows:

a. Soldiers should avoid the lighted areas around windows and loopholes. They will be better concealed if they fire from the shadowed interior of a room.

b. A lace curtain or piece of see-through cloth provides additional concealment to soldiers in the interior of rooms if curtains are common to the area. Interior lights should not be used.

2.56 **Texture and Colour.** Standard camouflage pattern painting of equipment is not as effective in built-up areas as a solid, dull, dark colour hidden in shadows. Since it is not always practicable to repaint vehicles before entering a built-up area, the patterns should be subdued with mud or dirt.

2.57 The need to break up the silhouette of helmets and individual equipment exists in built-up areas in the same way as it does elsewhere. Predominant colours are normally browns, tans and sometimes greys rather than greens, but each camouflage location needs to be checked for texture and colour.

2.58 Weapon emplacements should use a wet blanket or cloth to keep dust from rising when the weapon is fired. This also includes the back-blast danger area.

2.59 CP and logistical emplacements are easier to camouflage and better protected if they are located underground. Antennas can be remoted to upper storeys or higher buildings based on remote capabilities. Field telephone wire should be laid in conduits, in sewers or through buildings.

2.60 Soldiers should consider the background to ensure that they are not silhouetted or skylined but rather blend into their surroundings. To defeat enemy surveillance, soldiers should be alert for common camouflage errors such as the following:

a. tracks or other evidence of activity (vehicles should be kept to hardened roads and tracks wherever possible);

b. shine or shadows;

c. an unnatural colour or texture (eg, camouflage net should not be used in an urban environment);

d. muzzle flash, smoke or dust;

e. unnatural sounds and smells; and

f. movement.

2.61 Dummy positions can be used effectively to distract the enemy and make them reveal their position by firing.

2.62 **Shape.** The wall surfaces, roofs, windows and doors form lines and angular shapes. The soldier has a rounded figure. Vehicles and other equipment have distinctive shapes, all of which contrast with the urban form. Vehicles and positions can be painted or have false shapes erected to conform to the background patterns. Soldiers will merge with the background, where irregular shapes exist of a similar order of scale as their bodies. This occurs within foliage or rubble.

2.63 **Shine.** Most structural surfaces have a dim or rough surface. Though superficially dull, skin and equipment are much more reflective than surrounding structures and must be given a dull appearance so as not to stand out. This is most important at night.

2.64 **Shadow.** Urban structures form many angular, contracting and abrupt shadows, especially in bright conditions. These provide opportunities for concealment. There is usually a sharp contrast between the edges of building shadows and open lit areas. Movement is highlighted on these margins.

2.65 **Silhouette.** From most elevations and directions, a soldier standing at ground level has a background of walls, pavement or grass. The soldier's body shape normally contrasts with walls and may visually interrupt horizontal structural lines. This effect is reduced if the soldier keeps close to walls. In such a position, the joining line of ground and wall is not sharply broken. When viewed along a street, the soldier will tend to merge with the outline of the structure. Close to the wall, the soldier can move between such smaller vertical patterns such as doors, where they are less conspicuous. When moving on roofs, soldiers must be very careful to avoid being silhouetted against the sky. Similarly, inside rooms there may be an LOS through the building, providing a clear silhouette to an observer on the outside.

2.66 Movement and Flash. In any terrain, sudden movement and muzzle flash attract the eye. The lack of any soft cover or any partial obstruction of LOS makes the effect seem more pronounced in urban terrain. Muzzle flash and smoke from firing stand out more against the shadow of a building interior at the background wall. Ejected cases are frequently noticeable when bouncing on hard surfaces. Exposed movement needs to be carried out in short bounds between cover. The use of suppressive fire and smoke will assist in the movement from one firing position to another.

2.67 Noise Suppression. Noise suppression is of paramount importance in the urban environment because the enemy may be in close proximity. The hard surfaces of roadways, buildings and hollow walls, combined with the confining effect of rooms, hallways, tunnels and so on, tend to amplify, reflect and channel noise.

2.68 Urban areas afford cover, resources for camouflage and locations for concealment. The following guidelines for cover, camouflage and concealment should be observed:

a. Use the terrain and alter camouflage habits to suit your surroundings.

b. Total concealment is often incompatible with the ability to continue to perform a function. It may be possible to duplicate visual signs that cannot be concealed so that the actual position is no longer highlighted and, therefore, is better protected. Since an urban area is mostly artificial, such deception measures do not attract attention as sharply as would occur in other terrain.

c. Continue to improve positions. Reinforce fighting positions with sandbags or other fragment- and blast-absorbent material.

d. Maintain the natural look of the area.

e. Keep positions hidden by clearing away minimal debris for fields of fire.

f. Choose firing positions in inconspicuous locations when available.

g. Seek solid cover and stay inside or close to buildings.

h. Seek irregular backgrounds and interrupted surfaces.

i. Conform to the local pattern of layout and site positions at similarly sized features.

j. Stay in shadows inside and outside buildings.

k. Stay low.

l. Attempt to limit observing or firing over cover. Observe and fire through and around cover when possible.

2.69 Preparation of Soldiers and Equipment. The following camouflage should be applied to soldiers and equipment:

a. *Soldiers.* Weapons and large items of equipment can be recoloured with contrasting colours of grey or brown. Patterns of colours should be arranged as bold rectangles. This should be done in accordance with technical advice to avoid compromising weapon function or serviceability. Skin is camouflaged in the normal way. The weapon and equipment outline should be broken up by the use of camouflage materials.

b. *Vehicles.* Vehicles can be painted in a camouflage scheme that consists of boldly contrasting rectangles of pale grey, brown and tan, aligned horizontally and randomly arranged over the vehicle's surface. During operations of short duration, semisoluble emulsions may be used in preference to permanent colours. Antennae are modified or tied back so as not to project above the cupola or roof level.

Observation and Enemy Detection

2.70 Observation will often have to be undertaken from behind cover, possibly in close proximity to the enemy or in view of the enemy's optics. When carrying out these techniques, it is essential that all-round security is provided by the remaining

element. Exposure of the head should be avoided; instead, a periscope or a small mirror carefully held to avoid reflections should be used (see Figure 2–9). It is even less obtrusive to use the mirror at ground level (see Figure 2–10).

Figure 2–9: Enemy Observation – Kneeling

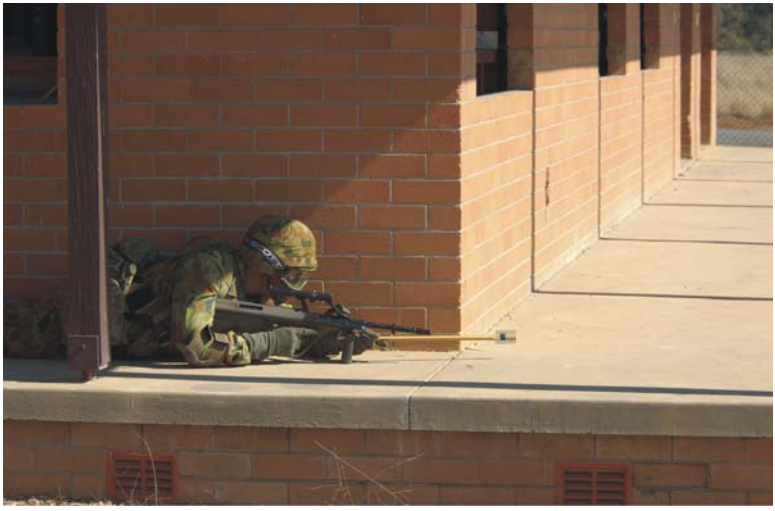


Figure 2–10: Enemy Observation – Ground Level

2.71 If the head has to be exposed, the soldier must lie flat and observe around the cover at ground level (see Figure 2–11). No other part of the body or weapon should protrude.

Figure 2–11: Observing Around a Corner

2.72 Enemy Detection. To identify the enemy and defeat their attempts at camouflage, the following areas should be carefully observed:

a. open windows, doors and other apertures on walls;

b. shadow trapped within rubble;

c. dominating positions;

d. foliage;

e. discarded shell cases;

f. wall ends and corners;

g. projectile scars and their point of origin determined from the line of fire; and

h. spoil or tracks.

Urban Contact Drills

2.73 Contact may take place at expected or unexpected times. The contact drill will take one of three forms:

a. when in contact and the enemy is sighted or observed,

b. when in contact and the enemy is not sighted or observed, and

c. when the enemy has been sighted but contact has not been initiated.

2.74 The following steps are to be taken when conducting the urban contact drill:

a. *Enemy Sighted.* During contact with the enemy when their position is known, cover, obscuration, and fire and movement should be used to move to a secure location, if necessary undertaking limited room clearance to ensure that the area is secure.

b. *Enemy Not Sighted.* When in contact when the enemy position has not been detected, the contact drill should be conducted. Prior to the move of the manoeuvre elements, suppressive fire should be directed at suspected and likely enemy locations. Although the emphasis is on speed, obscuration should still be utilised:

(1) Once members of the FE are in cover, they should secure their immediate environment, positioning themselves to repel an enemy counterattack (ie, a hasty defence).

(2) Once the FE is secure, it needs to be re-orientated along the axis of advance/assault.

(3) The FLOT should then be marked to give situational awareness to commanders by differentiating between own and enemy forces.

(4) FE need to confirm their status by a contact report to their next higher commander.

2.75 Enemy Sighted but Contact Not Initiated. Lead elements should immediately take cover and report enemy activity, location and strengths, and the appropriate action must then be decided upon. At all times, constant observation and battlefield commentary should be maintained regarding the location and movements of the enemy. The FE then needs to be prepared to conduct a quick or deliberate attack in support of further operations.

Hasty Firing Positions

2.76 In the course of UO it will be necessary to adopt hasty firing positions during the assault. There may also be a requirement to prepare hasty firing positions in order to defend for a short period while other tasks are carried out. The following are examples of hasty firing positions:

a. corners and walls;

b. exposed areas;

c. strong and weak side firing;

d. windows, doorways and unprepared loopholes;

e. rooftops; and

f. gutters.

2.77 Corners and Walls. When using corners and walls, soldiers must reduce their exposure to the absolute minimum. If possible, the muzzle should not protrude beyond the corner; however, when firing at right angles this will force the firer away from the wall and possibly expose their flank. In this case, it may be necessary to allow the muzzle to protrude. Corner positions should be as low as possible, and in contact it is possible to shoot out a firing recess.

2.78 Exposed Areas. Troops in exposed areas without cover should use ground to reduce their exposure by firing from the prone position, using shadows, foliage and background to reduce their signature (see Figure 2–12). The moving of local rubble or foliage may also reduce exposure. If hard cover is not available, the soldier should fire from a dead space. In urban

areas, some protection can be found by using gutters as firing positions.

Figure 2–12: Soldier Firing from Covered Position

Strong and Weak Side Firing

2.79 Because of the nature of urban terrain, a soldier must be able to fire a weapon accurately from both the right and left sides of cover without unnecessary exposure. The master hand side is referred to as the strong side and the other side is referred to as the weak side. If possible, the best option is to use left-handed firers in firing positions that require firing from the left of cover.

2.80 **Strong Side Firing.** The following techniques should be applied for strong side firing positions:

a. *Standing Corner Position.* In the standing corner position (see Figure 2–13) it is necessary to reverse the normal position of the feet in order to keep the firer as close to the wall as possible. The firer stands facing the wall. The outside foot is placed so that it does not protrude from

cover and the outside leg is used to brace the firer against movement away from the corner. The non-firing elbow or forearm, or the back of the hand, may be placed against the wall for support. The firing elbow must be kept down. In this position, the firer can quickly push back behind cover if necessary. Outside targets are engaged first and, as they are hit, the firer pushes further out, engaging other targets as they appear. It should be noted that the use of this position, or any other position in which the weapon is canted, would cause the fall of shot to drop and move laterally on the target.

Figure 2–13: Standing Corner Position

b. *Kneeling Corner Position.* As for the previous position, the traditional position of the feet is reversed, with the strong side leg being used to brace the firer (see Figure 2–14). The same principles apply as for the standing corner position.

Figure 2–14: Kneeling Corner Position

c. *Lying Corner Position.* The firer can move away from the wall slightly to conceal their weapon muzzle and to allow another firer (standing or kneeling) between them and the wall (see Figure 2–15). Most of the body must be kept behind the wall.

Figure 2–15: Lying Corner Position

d. *Side Prone Positions.* During UO it is likely that a soldier in the prone position may detect an enemy to their flank at short range. The quickest way to bring fire onto the enemy is by rolling onto the side while aligning the weapon (see Figure 2–16). A rifleman firing around cover on the weak side can also use this position.

Figure 2–16: Side Prone Position

e. *Fire Support from a Corner.* In confined situations, two or three firers may use the one corner by adopting the standing, kneeling and lying positions, with the highest person closest to the wall. The risk of having numerous soldiers in one central area is balanced against the increase of suppressive fire.

2.81 Weak Side Firing. In urban terrain, because of the flat, angular nature of cover, it will be necessary for firers to use their weak side in order to reduce exposure. These techniques feel uncomfortable at first, but it is vital that soldiers are not discouraged from practising them. With practice, to include live firing, soldiers will be able to provide effective fire from their weak side without exposing themselves unnecessarily. The two major methods are for the firer to change the weapon to the weak side or to modify the normal firing position to suit.

2.82 Weak Shoulder. The problem encountered when using bull-pup style weapons, such as the F88, from the weak shoulder is that the ejected round may strike the firer in the face. This can be overcome by pushing the weapon forward so that the ejected round clears the face and aiming using the

battle sights, or by canting the weapon so that the ejection opening is pointed at the ground. The disadvantages are that ejected rounds still occasionally strike the face and it is difficult to perform stoppage drills. Eye protection should be worn when firing from the weak side.

Other Firing Positions

2.83 Windows, Doorways and Loopholes. Windows, doorways and loopholes provide readily accessible firing points. Shell holes or other breaches may also be used as loopholes (further information on loopholes is provided in Chapter 5). When using windows or loopholes, the soldier must fire from as far back in the room as possible to reduce muzzle flash and from as low as possible to reduce exposure or silhouetting. Windows should only be opened the minimum distance and the glass smashed. However, this could draw attention to the firer, unless all windows are similarly broken. Doorways may be used for firing both into and out of buildings. Within buildings, weapons are fired from corner firing positions, usually from the master shoulder, and the standing or kneeling positions. When firing through exterior doorways, windows or breaches, the firer should remain as low to the ground as possible to avoid silhouetting or unnecessary exposure, and endeavour to use the additional protection provided by interior doorways.

2.84 Basic Aperture. A basic aperture firing position is placed centrally opposite a window, door or loophole. Depending on the distance from the wall, the firer may have a wide arc of fire and a proportionally greater degree of exposure. As the arc increases, they will suffer a loss of concealment. The term is also used to describe positions where the firer may be slightly offset from the true centre of the aperture.

2.85 Wall Defilade. A wall defilade firing position is set to the side of a window, door or loophole to fire diagonally through the aperture. The firer receives defilade protection and concealment from the close wall. Their arc is narrow and decreases further in proportion to the degree of defilade, the narrowness of the aperture and the thickness of the wall. Because of the narrowness of the arc, wall defilade positions

should not cover narrow gaps where the target will be moving rapidly. These are suitable to cover the close approaches to neighbouring positions, walls and obstacles. Wall defilade positions are often sited in pairs facing towards each other so that the arcs cross. It is important to note that a blind zone will be present both between arcs and inside each arc.

2.86 **Rooftops.** Peaked roofs and the edges of flat-roofed buildings provide exposed but potentially dominating firing positions. In such locations, it is difficult to avoid being silhouetted, so firers should remain as low as possible to reduce the size and signature of the target presented to the enemy. Chimneys or other roof structures should be used to reduce exposure. Roof ridge tiles and panels can frequently be removed by hand to create firing apertures. Tiles should be removed in a number of locations to avoid giving away the exact location of the firer. Portable screens can be employed to provide a backdrop to the firing position.

2.87 **Gutter Position.** If it is necessary to fire over low cover such as a gutter, log or low wall, a way of keeping exposure to a minimum is for the firer to lie on their back and fire at right angles over the cover.

SECTION 2-5. INDIVIDUAL FIRE AND MOVEMENT

2.88 Fire and movement conducted in an urban environment is no different from in any other environment, as the basic drill remains the same. However, the unique urban qualities of three-dimensional terrain, close proximity of the enemy, enhanced weapons effects and the position of supporting elements will all affect its execution.

2.89 **Techniques.** The methods of movement are the same as have already been taught: the leopard crawl and the monkey run (see *LWP-G 7-7-1, All Corps Individual Soldier Skills*

[Chapter3]). The following specific urban movement techniques should be observed:

a. *Moving Parallel.* When moving parallel to a building, soldiers should keep close to the walls and stay in shadows. They should move rapidly to the next covered position, presenting a low silhouette at all times. Movement along walls should take place approximately 30 cm away from the wall to avoid ricocheting enemy fire (see Figure 2–17).

Figure 2–17: Movement Parallel to Walls

b. *Passing Windows.* When passing windows, avoid exposing the upper body to an enemy deployed inside the building. An example of the method for passing windows is illustrated in Figure 2–18.

Figure 2–18: Passing Windows

c. *Passing Low Apertures.* When passing low apertures such as basement windows or gaps in foundation walls, seek to step or jump over the aperture (see Figure 2–19). If necessary, sprint past larger openings with the weapon trained inside.

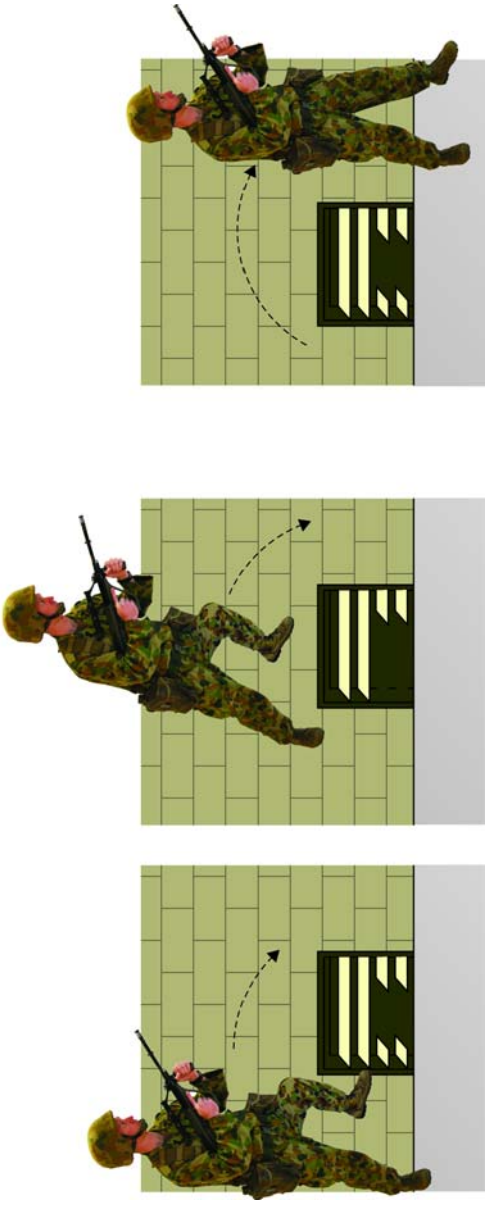


Figure 2–19: Passing Low Apertures

d. *Passing Doorways.* If the approach has been unobserved, a single soldier sprinting past a doorway is a difficult target to engage from inside a building. Conversely, when moving as part of a group, the first person past the door will alert any enemy inside. The members in the group behind the leader should pause and check by listening and taking a swift look inside the opening, with the weapon trained inwards. Some doorways can be passed by moving beneath the floor line. Figure 2–20 depicts soldiers passing a doorway.

Figure 2–20: Passing Doorways

e. *Passing Corners.* Corners are dangerous. Before moving around a corner, a soldier must carefully observe the open spaces beyond from a low position, preferably using a mirror or a periscope, as shown previously. Figure 2–21 depicts soldiers preparing to pass a corner.

Figure 2–21: Passing Corners

f. *Crossing Open Areas.* Open areas should be avoided if possible. If not, a route that offers cover or concealment should be selected and fire support used. If this is not possible, open areas should be crossed as a group at speed, limiting exposure to enemy fire. Figure 2–22 depicts soldiers crossing an open area.

Figure 2–22: Crossing an Open Area

g. *Using Doorways.* Doorways may be covered by fire or booby trapped and thus should be avoided when it is not essential to enter a building. Where doorways must be used, move rapidly between covered positions inside and outside the building that are clear of the door (see Figure 2–23). Take care not to appear in the doorway or move a door before emerging from cover. Entry through a closed door is risky. If the door does not open easily, the length of exposure time creates a risk.

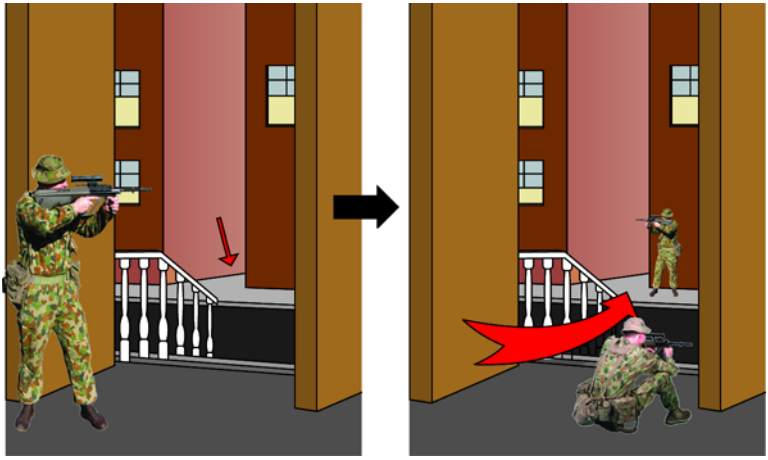


Figure 2–23: Using Doorways

h. *Diving Roll.* The diving roll is a useful manoeuvre to cross low obstacles and enter low, open windows and apertures. It is essential that other team members provide cover. The soldier dives over the obstruction, extending their hands and weapon out in front of them to break their fall. They then roll forward to recover in a squatting or standing position. Though very effective for rapid recovery on entry, the technique requires considerable agility and practice.

i. *Crossing Walls.* Walls are crossed only after checking the far side by, at the very least, listening for sounds of

enemy presence before negotiating the top of the wall, keeping as low a silhouette as possible.

2.90 Movement Inside Buildings. If a building is under fire or may come under fire, movement must take place below the level of apertures such as windows. Instead, movement is made well back from any opening to reduce the risk of exposure. Silhouetting against pale walls or in light visible through buildings must be avoided. Movement in hallways and corridors must be swift, using the cover of corners, walls and doorways. Movement along the walls should take place slightly away from the solid surface to avoid making noise. When moving along a wall, there is a higher risk from rounds that ricochet parallel to the wall.

SECTION 2-6. TEAM AND SECTION MOVEMENT

Inward-facing Arcs of Observation and Fire

2.91 Inward-facing arcs of observation and fire are often allocated to members of a team moving along walls near buildings and in streets. This contrasts with the outward-facing arcs normally allocated in open terrain. Walking along a street close to a wall, a soldier cannot effectively cover the near wall or engage targets appearing at windows or doors adjacent to their position. However, they can face across the street to observe and fire into openings. In this way, soldiers provide mutual support. When passing open spaces such as crossroads, soldiers turn to cover outward-facing arcs. They resume inward-facing observation on the far side.

Movement Considerations

2.92 The considerations for team movement in urban terrain are as follows:

a. *Individual Movement.* The individual techniques are applicable in many cases to the group methods.

b. *Dispersion.* In urban terrain occupied by the enemy, contact could come from any direction. It is unlikely that

the enemy will be seen first. FE must be sufficiently dispersed so that in a contact a burst of fire does not hit more than one soldier.

c. *Concealment.* Some operations will require that FE remain undetected during movement toward objectives. Though difficult, movement over and through urban terrain can be disguised. Therefore it is not 'patrolling' in the sense of an advance to contact, though the normal procedures of patrolling will apply. The need to conceal the force will influence all procedures and techniques but mainly route selection, formations and spacing.

d. *Route Selection.* Route selection is based on the objective location and factors such as the enemy, the time available and obstacles. Routes should be comprehensively planned prior to departure but capable of adjustment 'on the march'.

e. *Speed.* The need to conform to timings may dictate the rate of movement.

f. *Threat Level.* This will affect the method used and weapon carriage and alertness.

g. *Threat Direction.* In the urban environment, the threat from enemy action can come not only from the 360° horizon but also from above and below.

h. *Task.* FE may adopt a more defensive posture during movement back from tasks.

i. *Background Noise.* Advantage should be taken of any background noise such as traffic, aircraft, gunfire and so on in order to assist in a stealthy approach.

j. *Night Movement.* At night, movement should be confined to shadows, if possible. Light sources should be avoided at halts. It is prudent to assume that the enemy will have some form of night-fighting equipment.

Formations

2.93 Formations should be kept as simple as possible. The formation adopted by a patrol will depend on the following:

a. the type of patrol and its task;

b. the ground (including subterranean systems);

c. control;

d. protection;

e. concealment;

f. the need to produce maximum firepower immediately on contact; and

g. ensuring the ability to take immediate counterambush action.

2.94 The main formations for movement are as follows:

a. *Single File.* Single file is most commonly used by troops moving along covered routes through buildings and rubble or along the sides of streets. In this formation, a team is not split by open spaces. Two teams normally deploy two-up on a street to ensure that mutual support is maintained between those sections or platoons moving in single file on opposite sides of the street. In almost all circumstances, single file is the most suitable when surprise has not been lost. It offers the best method of concealing movement, as the group can move on the side of the street that offers the most concealment. However, troops are very vulnerable to fire from the front, and this must be considered before committing to this formation.

b. *Staggered File.* Staggered file is used on more open terrain where there are two parallel covered routes. A single team will move and split on both sides of a street in order to dominate flanking buildings by firing inwards across the street. Staggered file is also used during a move inside large buildings. This formation offers good

all-round protection but is more difficult to conceal, as the members are visible from both sides of the street. The minimum number of soldiers required to achieve staggered file is a team of four.

c. *The Rush.* The rush (see Figure 2–24) is used to ensure minimum exposure to enemy fire when assaulting, advancing or moving between cover. The formation usually employed when conducting the rush as a team is extended line. This technique is not to be used without covering fire.

Figure 2–24: The Rush

Observation Methods

2.95 When advancing or patrolling along an urban street the FE must provide all round observation and cover all arcs. Figure 2–25 illustrates one method of observation, and the teams can move in one of the following configurations:

a. *Trail.* The entire team moves simultaneously to achieve speed and is normally used in lower threat situations.

b. *Leapfrog.* One pair will move while the other pair is stationary in a firing position, ready to provide fire support. When the moving team has reached a forward position and halts, the support pair moves past and the cycle is repeated.

c. *Caterpillar.* This is similar to the leapfrog method except that the same pair always commences the forward move.

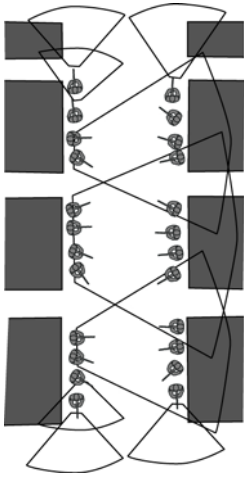


Figure 2–25: Patrolling Along an Urban Street

Rear Security

2.96 During all movement in the urban environment, it is essential that all FE employ a rear security force. This force may range from an individual or pair within a patrol (see Figure 2–26) to a platoon within a CT.

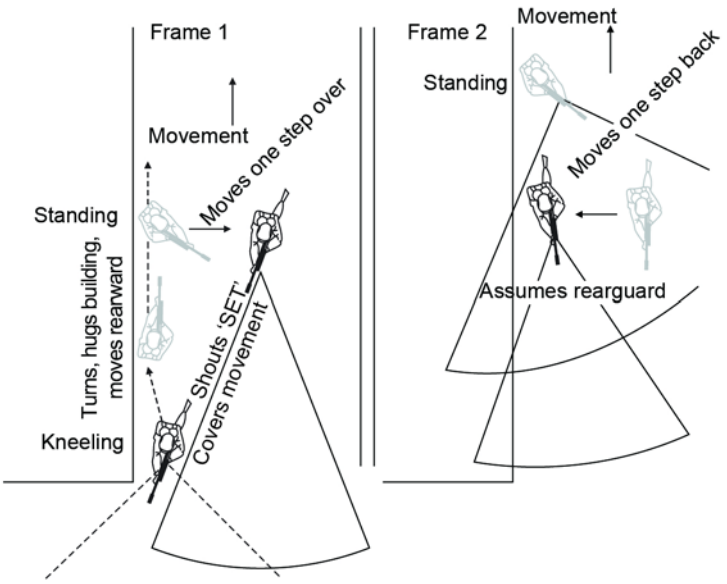


Figure 2–26: Rear Security

SECTION 2-7. TEAM FIRE AND MOVEMENT

Basic Firepower Considerations

2.97 The requirement to cover all movement by fire remains unchanged during UO, though with an increased emphasis on the three-dimensional environment, as follows:

a. *Confined Areas.* In confined areas, it is often not feasible for FE to move alternatively and support one another. Restrictions will often prevent one FE from providing effective support to another which has advanced. In buildings, FE must often rely on their own resources to overcome the enemy. Supporting FE may not be in a position to bring fire to bear or they may have difficulty in that the leading FE are in their line of fire. When

providing direct covering fire for manoeuvre in confined areas, these considerations apply:

(1) *Angle of Support.* FE must seek to provide covering fire from an angle that avoids masking. In a street, this must be carried out from the opposite side or from a position of elevation.

(2) *Integral Support.* Engagements at close quarters are common where the firepower integral to the team must carry the encounter. It follows that sufficient firepower must be available.

(3) *Short Bounds.* Bounds must be kept short to reduce the possibility of masking and the likelihood that forward troops could be engaged by enemy that are in dead spaces to the supporting troops.

b. *Concealed Routes and Indirect Fire.* The use of concealed routes and indirect fire reduces the need for a complicated organisation of direct fire to cover movement. Smoke provides a good means of concealing movement, though not presence.

Basic Patrolling Considerations

2.98 Obstacles. In many respects, urban terrain is a continuous series of obstacles, and it must be treated as such by a patrol moving on unsecured ground. Considerable stealth and caution are necessary for troops crossing roads and open areas or even simply moving past buildings. Patrol movement will often be slow.

2.99 Covered Routes. Some urban areas provide a large number of possible covered routes between, around and through buildings. There will be times when totally concealed underground routes are available. Covered routes offer a considerable advantage to a defender in redeploying patrols and concentrating force. Such routes are also useful to an attacker conducting infiltration. The scope for patrolling

activities will be governed by the layout of covered routes and the efforts to deny taken by either side.

2.100 Vulnerability. The three-dimensional aspect of urban terrain makes a patrol vulnerable to attack from above and below, as well as from the traditional 6400 mil horizon.

2.101 Indirect Fire Support. Indirect fire support is more difficult to achieve in an urban environment due to the complexity of employment. Providing reliable communications is crucial to this capability.

2.102 Return Points. Because of the proximity of the enemy and the confusion of the urban battle, re-entry into friendly areas will be hazardous. Returning patrols need specific entry points and drills to reduce the chances of being engaged by friendly fire.

2.103 Exploiting Urban Features. The special features of urban areas should be fully exploited, and height is used to increase effective observation. The exposed linear obstacles formed by roads provide natural lines of detection and fire. Positions are selected to allow personnel, weapons and sensors to make best use of the terrain.

2.104 Security. Most positions are surrounded by blind areas. It is usually impossible to ensure that a position is secure from being outflanked or attacked by an enemy who uses concealed approaches. Security depends heavily on avoiding detection through discipline and the concealment of positions.

2.105 Overwatch (One Foot on the Ground). No element of the force should move without another element being in a position to provide instantaneous fire support. The principle of one foot on the ground is the same as for any other platoon/section movement. This element may or may not be moving while conducting the overwatch task. In the urban environment the overwatch element may or may not be internal to the moving force, for example, snipers.

2.106 The key principles for patrolling in all environments are covered in *LWP-CA (DMTD CBT) 3-3-8, Patrolling*, with urban patrolling covered in Chapter 7 of that publication.

SECTION 2-8. PERSONNEL HANDLING

WARNING

Failure to comply with the laws of armed conflict may result in disciplinary action being taken.

Captured Persons

2.107 The complex human terrain present in urban areas will inevitably mean that non-ADF personnel will be captured or detained during operations. The term 'captured person' (CPERS) is a generic term that encompasses all persons, other than ADF members, captured or otherwise taken into custody by a deployed force. All such persons in the custody of the ADF are referred to as CPERS until they have been classified, after which they will be referred to, in accordance with their classification, as one of the following:

a. a prisoner of war (POW);

b. a retained person;

c. a security internee;

d. a compassionate internee; or

e. a criminal detainee.

2.108 The handling procedures for both POW and detainees may differ depending on the environment and the situation.

2.109 The guarding and processing of POW and detainees will drain manpower and add to difficulties facing commanders. POW are to be handled in accordance with the provisions of the Geneva Conventions: treated humanely and with respect for their personal life, gender, race and religion. The mental attitude of POW will affect plans for their handling. Initially, POW and

detainees could be expected to be in any of the following states:

a. frightened at having been in combat, though relieved to be alive;

b. anxious and unsure of the future;

c. desperate to rejoin comrades by escaping;

d. ashamed of their surrender and capture; and

e. obstructive and resistant.

Common Capture Procedure

2.110 The common capture procedure applies to all CPERS, regardless of the reason for or circumstances of their capture. The common capture procedure is divided into three steps, only the first of which, Step 1, is relevant to this publication. It covers the period from the point of capture (POC) to the initial collection and processing centre (ICPC) or exploitation unit. The length of this period, known as the unit holding period, may be promulgated by the force commander and is usually not longer than 6 hours. Step 1 incorporates the following actions by capturing units:

a. disarm,

b. search,

c. restrain,

d. guard,

e. tactically question, and

f. escort CPERS to an ICPC or exploitation unit.

Disarming Captured Persons

2.111 CPERS who have only just been captured or made the decision to surrender pose several threats to capturing troops. CPERS may be shocked by their capture, unsure of their decision to surrender, concerned about their future treatment, wary of capturing troops and concerned about the potential for

reprisals against them for actions taken previously. The 'shock of capture' must be maintained to aid in rapid and effective disarming, restraint, search and escort of CPERS away from the POC, which may also be a battle area. This shock may also benefit the tactical questioning (TQ) and exploitation process. As a result, it is important to ensure that the following procedures are applied when disarming CPERS:

a. Continuing to point weapons at the CPERS, soldiers should order them to put down any weapons in their hands and to move away from their weapons with their hands above their heads. This applies equally in warfighting and military operations other than conventional war. During operations where CPERS are unlikely to speak or understand English, it is very important for soldiers to be familiar with the equivalent phrases in the languages of likely CPERS. During warfighting operations, surrendering military personnel may approach capturing troops under a white flag, with their hands above their heads and/or having already discarded their primary weapons. CPERS may also be wounded and unable to stand, and weapons may be located beside them on the ground.

b. If a CPERS fails to drop their weapon after a reasonable period has elapsed, they should again be ordered to put down their weapon and warned that if they do not do so they will be shot. If the CPERS fails to respond to this order within a reasonable time span, a third warning should be given. If the CPERS prepares to use a weapon, or refuses to put their weapon down after being warned three times, capturing troops may be justified in opening fire on the CPERS in order to safeguard themselves and others against the imminent danger of serious injury or death.

c. Once the primary weapon has been dropped, a visual scan may identify further weapons. If any capturing troops observe additional weapons, other friendly troops in the area should be advised.

d. At this point the CPERS becomes 'out of the fight' and is protected by the laws of armed conflict. Capturing troops must maintain awareness of the wider area, as there may be other hostile elements nearby who have not been captured and who may fire on capturing troops. Where possible, discarded weapons should be retrieved at this time.

e. Capturing troops should then visually inspect the CPERS as they approach in order to establish that the CPERS are not armed with small secondary weapons such as grenades or knives. The CPERS should then be ordered to halt.

f. Depending upon the number of CPERS and the number of capturing troops available, CPERS will generally be ordered to approach the capturing troops one by one or in small groups in order to be searched. In circumstances where large numbers of CPERS surrender to small numbers of capturing troops, it is likely that this process will take a considerable period; however, the searching of all CPERS is crucial to the safety of capturing troops and must be carried out to ensure that no concealed weapons are retained by CPERS. Care must be taken to ensure that all CPERS are covered with sufficient weapons to deter them from either attempting to escape or attacking capturing troops.

Searching Captured Persons

2.112 Objectives of Searching. The objectives of searching CPERS at the POC and prior to TQ are as follows:

a. to remove concealed weapons and escape aids,

b. to recover items of intelligence significance and interest for further exploitation,

c. to aid in correctly categorising CPERS for exploitation,

d. to reinforce moral ascendancy over the CPERS, and

e. to maintain the shock of capture.

2.113 Type of Search. The only type of search to be used during Step 1 of the common capture procedure is the frisk search. The frisk search is used to achieve the following:

a. to disarm the CPERS and make captured weapons safe, and

b. to remove any escape aids and make a quick but efficient search of both the CPERS and the area in which they were caught in order to recover items of intelligence significance and interest that may have been discarded or partially destroyed.

2.114 Frisk searching is carried out following capture, prior to each TQ session and prior to escorting the CPERS to an ICPC or exploitation unit. Frisk searching can be conducted with the CPERS in the prone or kneeling position, depending upon the circumstances of capture and the apparent compliance of the individual CPERS.

2.115 Principles of Searching. The principles of searching are as follows:

a. *Be Methodical.* To ensure that no part of the body is missed, searches must be methodical. Prior to commencing the search, it is advisable to mentally divide the CPERS into sections. The aim of dividing is to ensure that the searcher works in a logical sequence until the search is complete. It is suggested that division should be by either:

(1) left and right;

(2) top, middle and bottom;

(3) back and front; or

(4) for CPERS lying in the prone position, a combination of these alternatives.

b. *Be Meticulous.* To ensure that nothing is missed, each search must be meticulously carried out. Any article

belonging to the CPERS that could be used to conceal an item should be checked. This extends to any potentially hollow space, including the seams of clothing and equipment. Where possible, when searching bags or pouches, tip the contents out onto a flat surface so that they may be viewed prior to searching.

c. *Be Thorough.* At the conclusion of the search, a complete and thorough inspection of the CPERS and their personal belongings should have been made. The thoroughness of the search will depend on the time available as well as the environmental and tactical situations.

d. *Maintain Shock of Capture.* During the common capture procedure, the maintenance of the shock of capture is of the utmost importance in ensuring that CPERS remain amenable to TQ and interrogation. Firm, correct handling and searching will contribute significantly to this and will ensure that CPERS are aware that they are completely under the control of the capturing troops.

e. *Return Protective Equipment.* Some CPERS will have protective equipment in their possession at the time of capture, particularly those captured during warfighting operations or in extreme environmental conditions. Equipment for the personal protection of POW cannot be permanently removed from them under the terms of the Third Geneva Convention. However, any protective equipment must be thoroughly searched before being handed back to the CPERS. Such equipment includes, but is not limited to:

(1) ballistic protection, including:

(a) helmets, and

(b) flak jackets;

(2) chemical, biological, radiological and nuclear (CBRN) equipment; and

(3) wet/cold weather protective clothing.

f. *Return Identification.* Uniforms, badges of rank and identification discs may only be temporarily removed for the purposes of recording their characteristics or the information recorded upon them. Such items are to be returned to the CPERS immediately after such recording.

g. *Maintain Hygiene.* As various illnesses and diseases are likely to be prevalent in an operational area, it is imperative that hygiene standards be maintained when physically handling CPERS. This includes the use of disposable surgical gloves during searches where necessary, and maintaining an awareness of and taking preventative action against handling potentially contaminated items such as CBRN masks and suits without appropriate safeguards.

h. *Record Captured Personal Equipment.* All items of equipment and personal belongings except basic clothing or uniforms, protective equipment, badges of rank and identification discs (where applicable) should be removed from each CPERS and placed in a suitable container such as a sandbag. This container is also to be tagged with Part C of the captured personnel and equipment/documents tag, and the contents recorded on the tag so that it can be cross-referenced and processed with the CPERS.

i. *Document Results of Search.* It is essential that the results of all searches be recorded on Part C of the captured personnel and equipment/documents tag. Items of intelligence significance and interest should also be brought to the attention of TQ point staff at the CPERS assembly point.

2.116 Female and Juvenile Captured Personnel. Where possible, female and juvenile female CPERS are to be searched by females. Where female troops are not available, the searching of female and juvenile female CPERS is to be conducted in a covered, private area in the presence of an officer or SNCO

where possible. The searching of male juvenile CPERS is to be conducted by male troops.

2.117 Wounded, Sick and Injured Captured Personnel. Arrangements should be made for wounded, sick and injured CPERS to be searched at the regimental aid post as early as possible after capture and prior to medical evacuation. This is particularly important, as resistance-trained troops will have been trained to feign injury and illness to avoid interrogation. If dressings are to be searched, a doctor or qualified medic must give approval and supervise the search.

Restraining Captured Persons

2.118 Justification for Restraint. In most cases, it will be necessary to restrain CPERS at the POC. CPERS may be restrained for imperative reasons of security to protect the identity of CPERS and to prevent any of the following:

a. escape or violence on the part of particular CPERS against other CPERS or guarding troops;

b. CPERS observing or hearing friendly troop deployments, including the layout and guarding arrangements of the CPERS assembly point and ICPC; and

c. verbal communication by CPERS with other CPERS or hostile forces.

2.119 The forms of restraint that may be imposed on CPERS are as follows:

a. physical restraint of the hands,

b. hearing control,

c. sight control,

d. gagging, and

e. hooding.

Procedures for Restraining Captured Personnel

2.120 Depending on the type and extent of restraint imposed, the restraint of CPERS can result in the need for additional guarding resources to lead sight-controlled or hooded CPERS, to guide hearing-controlled CPERS and to feed CPERS with their hands restrained behind their backs. The restraint can also interfere with CPERS using protective equipment. Restraint of CPERS in an active CBRN environment is only to be undertaken when authorised by the ROE.

2.121 Approved restraints will be detailed in the ROE but will usually be limited to the following:

a. physical restraint of the hands:

(1) toggle rope or similar improvised restraints (only to be used as a field expedient at the POC and for as short a time as possible);

(2) purpose-designed disposable plastic handcuffs; or

(3) purpose-designed metal mechanical handcuffs (as issued to the military police [MP]);

b. hearing control – commercial earmuffs;

c. sight control:

(1) an improvised blindfold using a clean piece of cloth, or

(2) purpose-designed blacked-out goggles;

d. gagging – a clean piece of soft cloth; and

e. hooding – a clean, thin cotton hood (such as a pillowcase or a purpose-designed hood), noting that sandbags are not be used as hoods.

2.122 Under no circumstances are CPERS to be handcuffed to vehicles or other objects. CPERS are not to be placed in stress positions and are to be permitted and encouraged to change their position and posture to ensure proper circulation and to

minimise discomfort. CPERS are not to remain in, nor be transported in, the prone (face-down) position. Restrained CPERS must be carefully monitored at all times. If a restrained CPERS experiences difficulties in breathing normally, medical assistance must be sought immediately.

2.123 Tactical Questioning. TQ is basic questioning of CPERS conducted by the capturing unit. It is confined to gaining information of immediate tactical value to the unit commander from CPERS who are already cooperative. TQ is to be closely supervised and controlled by the unit commander. TQ of CPERS held by the ADF is to be conducted only by currently qualified personnel trained by the Defence Intelligence Training Centre. This ensures that CPERS are handled correctly and are not exposed to incorrect or inappropriate TQ procedures. The use of incorrect or inappropriate TQ procedures may breach Australia's legal obligations, subject the personnel involved to criminal prosecution and compromise potential criminal proceedings against CPERS. The employment of incorrect or inappropriate TQ procedures could also assist CPERS in maintaining their will to resist and thereby hinder subsequent interrogation.

Movement of Prisoners and Detainees

2.124 Prisoners and detainees should be moved back to the ICPC as soon as possible. The following points should be considered:

a. CPERS should be tied or handcuffed if it is necessary to prevent their escape. If there is a requirement, both hands should be secured behind the back using a double loop or plastic cuffs. Sight-controlled or hooded CPERS will require additional escorts for movement.

b. CPERS, with all of their equipment, should be escorted to the collection point. Two soldiers can escort four CPERS. They should be kept closed up in single file and not allowed to talk. If necessary, their boots may be unlaced or their webbing loosened so that it hinders leg movement. CPERS should be made to place one hand

on the shoulder of the person in front of them in order to maintain control of the group.

c. The route for the movement of prisoners and detainees should be reconnoitered in advance. Depending on the route or the situation, the use of vehicles might be considered. It may also be necessary to use the CPERS to carry stretchers at the same time.

2.125 Section Equipment. Each section should carry a POW pack, consisting of:

a. plastic cuffs;

b. rope/cord;

c. plastic bags;

d. waterproof marker;

e. coloured card and pins; and

f. POW handling cards.

2.126 All CPERS, POW and detainees are to be treated in accordance with the information given in *LWP-G 0-1-7, Internment and Detention*.

Non-government Organisations

2.127 Within urban environments, there may be non-government organisations (NGO) providing humanitarian aid to local inhabitants. When operating within close proximity of NGO, the following should be considered:

a. Interaction between friendly forces and NGO should be conducted only through appointed LO within both organisations.

b. NGO should not be allowed to interact with CPERS until after ICPC staff have conducted interrogations and interviews.

c. Care should be taken to ensure that tactical information is not discussed in the presence of NGO personnel.

d. All NGO personnel should be escorted at all times within friendly areas.

e. NGO food and aid distribution points may require a secure area and FE to prevent potential incidents.

SECTION 2-9. CASUALTY PROCEDURES

2.128 Due to the complex nature of the urban environment, the number of battle and non-battle casualties are usually far higher than those in other environments. CASEVAC will be a major problem, and suitable drills need to be practised at all levels. Every soldier must know how to administer first aid and assist in CASEVAC. In addition, all FE, down to the smallest team, must have coordinated and effective CASEVAC plans.

Marking Casualties

2.129 The marking of casualties is the first important step in any CASEVAC plan. Points to note are as follows:

a. *Inside a Building.* Under the NATO marking system, a yellow marker should be positioned at the POE to indicate a casualty in a particular building. Where possible, all casualties should be gathered in a group close to the POE and moved inside a building to provide extra protection.

b. *In the Open.* Any casualty in the open should be moved to a safe location in some form of cover for protection.

Stretcher Improvisation

2.130 An improvised stretcher should be strong, light and narrow with some form of handles or grips. The following items might be considered for use:

a. doors, tables or gates;

b. ladders;

c. bedding or carpets;

d. furniture, such as chairs or bed frames;

e. ponchos, individual protective equipment or combat jackets; and

f. cables and ropes for tying.

Redistribution of Equipment

2.131 Equipment such as radios, medical supplies and other mission-essential equipment should be redistributed as necessary. Weapons such as machine guns or light anti-armour weapons, and ammunition and explosives should also be redistributed. All personal equipment, including the personal weapon and one magazine, should travel rearward with the casualty.

Movement

2.132 When moving casualties rearward, the CASEVAC party has to ensure that they avoid exposing themselves, or the casualty, to enemy fire or danger. The following should be remembered:

a. Movement within buildings is extremely difficult. Movement will be hampered by narrow corridors, doorways, mouse-holes, stairs, rubble, other troops, resupply parties, reinforcements, resting sections and reserves. This is made worse by unwieldy stretchers weighed down with a casualty. Movement, where possible, should be controlled and organised so that normal triage can take place.

b. When movement between buildings is hazardous and difficult, use must be made of any cover such as walls, dead ground and smoke. If under contact, fire must cover any movement. Movement should be made along existing safe routes.

c. If secured, underground systems can be used as safe routes to evacuate casualties. Movement may be restricted by the confined space, but this may be the quickest, safest and least congested option.

d. Whenever possible, consideration should be given to using vehicles for CASEVAC. However, this can be

considered only if the area is secure and safe from a hand-held anti-armour threat (a minimum distance of 400 m).

e. The priority for using safe lanes for moving a casualty within the defensive position should be covered in orders. Priority should be given to reinforcements, ammunition resupply and CASEVAC.

Medical Supplies

2.133 Company medics and combat first-aiders should ensure that they have sufficient supplies for operations. Extra first field dressings, morphine, crepe bandages and intravenous drips should be carried. All supplies should be waterproofed during battle procedure. All soldiers should be given refresher training on first aid, self-aid and treating the most likely injuries.

Casualties

2.134 Dead. All bodies, friendly or enemy, should be processed, including the redistribution of all weapons and equipment. Human remains should be separated from casualties.

2.135 Wounded. All wounded, whether enemy or friendly, should be treated and evacuated in the same way without priority. Their equipment, ammunition and weapons should be utilised where possible.

CHAPTER 3

GAINING OF ENTRY

SECTION 3-1. INTRODUCTION

3.1 The ability to gain access through, into and out of buildings is an essential skill in the urban environment. With these skills, soldiers have relative freedom of movement. To be successful, the soldier must be able to climb and descend with and without aids. Entry can be gained using existing points of entry or by forced entry.

3.2 Historical accounts highlight some of the many aspects of military operations in urban environments and reinforce the importance of fire and movement, whether it is between suburbs, streets, buildings or rooms.[1] In an environment where every open space may be an enemy EA and every street is covered by some kind of fire, the ability to clear buildings and then use them as covered access routes if required is a crucial skill. The first step is gaining entry.

3.3 This chapter describes the gaining of entry and building drills used by all corps and covers the following:

a. manual breaching,

b. ballistic breaching, and

c. explosive breaching.

1. For an historical perspective see Taylor, J. M., 'Hue: A 1989 Analysis' at http://www.globalsecurity.org/military/library/report/1989/TJM.htm, accessed 18 February 2013.

SECTION 3-2. ENTRY

Considerations for Gaining Entry

3.4 In gaining access to buildings and other urban structures, the following considerations apply:

a. *Suppress.* All available weapon systems must be used, within existing ROE, to suppress known and suspected enemy locations. Suppression is vitally important to allow the safe manoeuvre of own forces while negating hostile fire. During the assault, achieving force ratios of 2:1 will have a greater effect in terms of suppression than the force ratio of 1:1, and is a key to success and reducing casualties.

b. *Obscure.* Suitable natural or artificial cover will not always be available to assaulters or assault elements. In this case, smoke must be used instead. Care needs to be taken to ensure:

(1) that screens are laid at the required height for sufficient duration, and

(2) that smoke is not concentrated at one point, which would compromise security.

c. *Secure.* Protection must be given to troops climbing or entering. Soldiers climbing walls are best protected by covering soldiers deployed well back where they can see into windows to provide fire support. Security elements must not be masked by smoke.

d. *Reduce.* An obstacle may be breached (or reduced) manually, ballistically or explosively, or by a combination.

e. *Assault.* Considerations for assault should include:

(1) *Cover.* Access points should be selected to provide cover from enemy view and fire on entry. Maximum use should be made of concave

corners, recesses, building projections and foliage.

(2) *Speed.* Access must be gained as quickly as possible so that exposure is minimised. This is achieved by well-practised drills, sound preparation and thorough briefings before troops leave cover.

(3) *Minimum Exposure.* Troops must avoid exposure in front of windows, doors, other apertures and penetrable walls. This is achieved by careful planning and coordination. Well-practised drills are essential to crossing vulnerable points without casualties.

Access and Entry

3.5 When entering a building, a soldier should have minimum exposure. An entry point must be selected before moving towards the building. Windows and doors should be avoided, though this may not be possible. Smoke should be used to conceal the advance to the building. Demolitions, tank rounds and combat engineer vehicles should be used to create new entrances.

3.6 **Top-down Entry.** Clearing a building from the top down is the preferred method. Clearing or defending a building is easier from an upper storey. Gravity and the building floor plan become assets when throwing hand grenades and moving from floor to floor. Other points to note are as follows:

a. An enemy who is forced to the top of a building may be cornered and fight desperately or escape over the roof. However, an enemy who is forced down to ground level may withdraw from the building, thus exposing themself to fire from outside.

b. Various means (eg, ladders, assisted lifts, drainpipes, vines, helicopters, or the roofs and windows of adjoining buildings) may be used to reach the top floor or roof of a building. In some cases, one soldier can climb onto the

shoulders of another and reach high enough to pull themself up. Another method is to attach a grappling hook to the end of a scaling rope so that a rifleman can scale a wall, spring from one building to another or gain entrance through an upstairs window.

3.7 Entry Point. Entry points to buildings are selected on the basis of the following:

a. using dead space relative to other enemy positions or possible positions,

b. using dead spaces on the objective itself,

c. the availability of covered or concealed approaches,

d. the availability of short approaches if covered approaches are not available, and

e. avoiding obstacles or taking the opportunity to cross obstacles at the least vulnerable points.

3.8 Entry at Lower Levels. Buildings should be cleared from the top down. However, it may be impossible to enter a building at the top; therefore, entry at the bottom or lower level may be the only COA. When entering a building at lower levels, soldiers should avoid entry through windows and doors, since both can be easily booby-trapped and are usually covered by enemy fire. Other points to note are as follows:

a. When entering at lower levels, demolitions, artillery, tank fire, antitank weapons fire or similar means are used to create a new entrance to avoid booby traps. Quick entry is required to follow up the effects of the blast and concussion.

b. When the only entry to a building is through a window or door, supporting fire should be directed at that location. Grenade launchers may be used to support the entry, allowing for munition arming distances.

c. Before entering, a hand grenade should be thrown into the new entrance to reinforce the effects of the original blast. When making a new entrance in a building,

consider the effects of the blast on the building and adjacent buildings. If there is the possibility of a fire in an adjacent building, the local commander should coordinate action with the adjacent troops. In wooden frame buildings, the blast may cause the building to collapse. In stone, brick or concrete buildings supporting fire is aimed at the corner of the building or at weak points in the building construction.

3.9 There are certain entry techniques to speed up the rapid entry into a building, and they involve the whole of an FT. The one-man lift and the two-man pull are the usual methods of rapid entry but others can be adapted (eg, the two-man supported lift) to suit the local conditions.

Unforced Entry into Buildings

3.10 The methods for unforced entry are the simplest but still must be carried out correctly if risks to soldiers are to be minimised. The options are as follows:

a. *Remote Opening.* If the situation and time permit, doors and windows should be opened remotely. This reduces the risk of casualties from booby traps or fire from within. Naturally, locking mechanisms must first be released before proceeding. Doors that open inward and outward are treated similarly, except that inward-opening doors must be pushed using a long pole once the door mechanism is released. The simplest aids to remote opening are cordage, or a length of rubber strip or pipe.

b. *Strip and Cord.* A rubber strip is wrapped around a doorknob in the direction of release. Tension may be applied to a cord attached to the rubber. This exerts a rotating force to release the knob, allowing the door to be pushed or pulled as required.

c. *Pipe and Cord.* A stiff rubber pipe with a cord attached is slid over a door handle. The cord is pulled to release the door mechanism.

3.11 Hands-on Opening. Circumstances will not always permit time for remote opening or even the testing of doors or windows. However, exposure to booby traps and weapons is a constant risk and, even when hands-on entry is required, some techniques can be used to minimise the risk. The following are some examples:

a. *Extended-arm Operation.* Doors and locks must always be tried or opened with a fully extended arm. This simple precaution places the soldier at the greatest distance possible from the source of danger.

b. *Prone Position.* The risk of being shot through penetrable walls is reduced if the door is approached in the prone position, whether on the front or back. The door is then opened with the arm fully extended.

c. *Window Slipping.* Windows must always be tested from below the level of the sill. Only the hands reach over the sill, and if possible they can be guided by another observer. Once it has been determined that the window can be moved, it is opened by a soldier standing to the side and using an extended arm.

Techniques of Ascent, Descent and Gap Crossing

3.12 Ascents, descents and gap crossings require coordinated teamwork assisted by ropes, ladders and poles.

3.13 Safety. The preferred method for entry through windows or any glass opening is to use the backs of the hands rather than the palms to support the body. This will reduce the chance of incapacitating injuries to the palms and wrists, regardless of the type of gloves worn. The ideal entry technique for clearing windows and small openings is the feet-first launched method. This is carried out by swinging the body through the opening feet-first, which reduces body contact to the window frame. This will also reduce the exposure time in the opening, while decreasing the entry time.

3.14 Body Assisted. Other soldiers provide the stepping surfaces and lifting power, and constitute the most basic and readily

available aid. The body-assisted methods of climbing are detailed in the paragraph 3.15 to paragraph 3.20.

3.15 One-man Step. A one-man step (see Figure 3–1) may be used to gain access through ground floor windows or other low gaps. The technique is carried out as follows:

a. The first soldier arrives at the access point. They crouch below the cover of the window, having first breached the window if necessary.

b. The technique is to first step off the crouching soldier. Support for the first step is found either from the pouches of the crouching soldier or the thigh of the crouching soldier.

c. The second step is onto the shoulder of the crouching soldier and then through the opening.

d. The supporting soldier must force themself backwards against the wall to support the outward thrust as the entering soldier pushes off into the room.

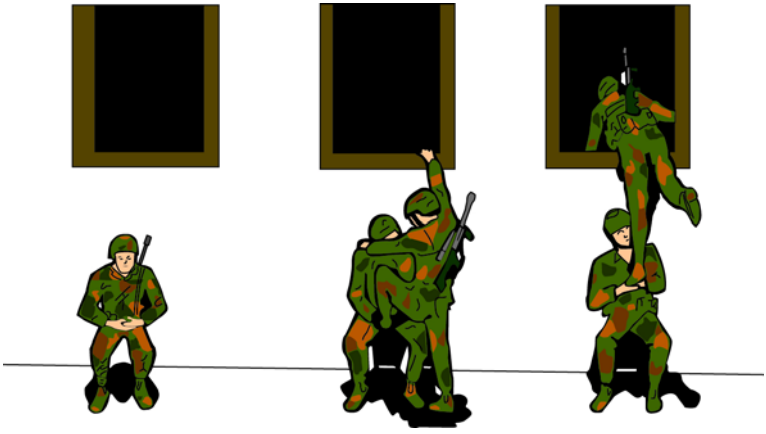


Figure 3–1: One-man Step

3.16 Two-man Supported Lift. The two-man supported lift (see Figure 3–2) uses a board, pipe or similar piece of material to provide a solid surface for lifting. This is carried out in the same manner as the unsupported lift. With this method it is possible to raise a soldier slightly higher. The technique is carried out as follows:

a. Two soldiers stand facing each other holding a support between them, gripped overhand so as to lift the support high above themselves.

b. Another soldier steps onto the support.

c. Once their feet are on the support, the two soldiers raise the load, lifting the third up to reach the entrance or top surface.

d. The third soldier pulls themself up, keeping low.

WARNING

Climbing onto or through a window frame containing glass fragments can cause laceration and serious injury. Ensure that glass fragments are fully removed before entering through a window.

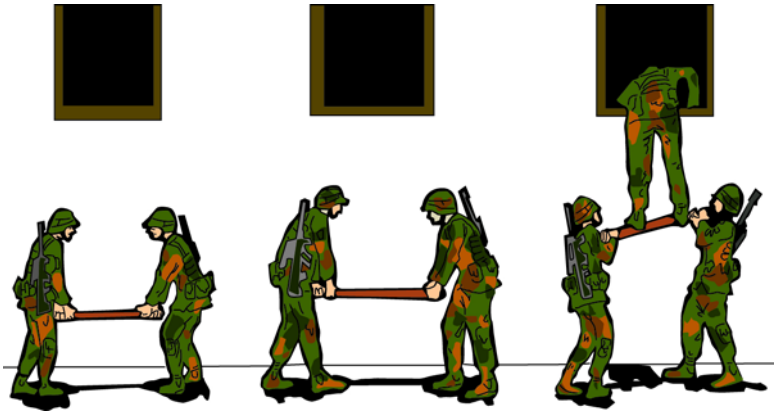


Figure 3–2: Two-man Supported Lift

3.17 Two-man Unsupported Lift. The two-man unsupported lift (see Figure 3–3) is used to raise a soldier to a low roof, a high ground floor window or wall of up to 3 m high. The technique is carried out as follows:

a. Two soldiers bend slightly over, facing each other with their hands cupped together.

b. A third soldier steps into the cupped hands of the two soldiers.

c. Once both feet are in the cupped hands, the two soldiers push on the third, lifting them upwards to reach the top surface.

d. The third soldier pulls themself up and over the surface, keeping as low as possible as they enter. They may have to step on the lower soldiers' shoulders or heads for assistance.

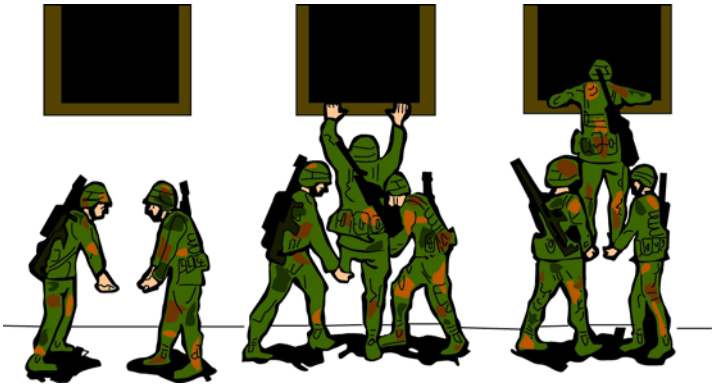


Figure 3–3: Two-man Unsupported Lift

3.18 Two-man Lift with Heels Raised. The two-man lift with heels raised (see Figure 3–4) provides a stable silent lift. The technique is carried out as follows:

a. One soldier stands facing the wall with their palms flat out on the surface. The feet should be about 60 cm out from the wall with heels raised.

b. Two other soldiers, facing each other, bend over to grasp the heels of the first man and then lift them up with one sharp movement.

c. The first soldier pulls themself into the entrance.

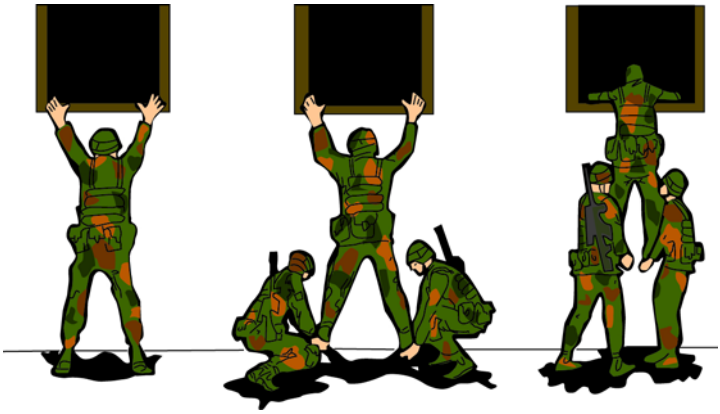


Figure 3–4: Two-man Lift with Heels Raised

3.19 One-man Lift. The one-man lift (see Figure 3–5) is used when there are only two soldiers at ground level. The technique is carried out as follows:

a. One soldier stands with their back or side braced against a wall and their hands cupped.

b. A second soldier steps into the cupped hand with one foot and is lifted up to step onto the shoulders of the first soldier. They reach up to grasp the sill.

c. The second soldier pulls themself into the entrance or is assisted by a third soldier who is already inside the entrance.

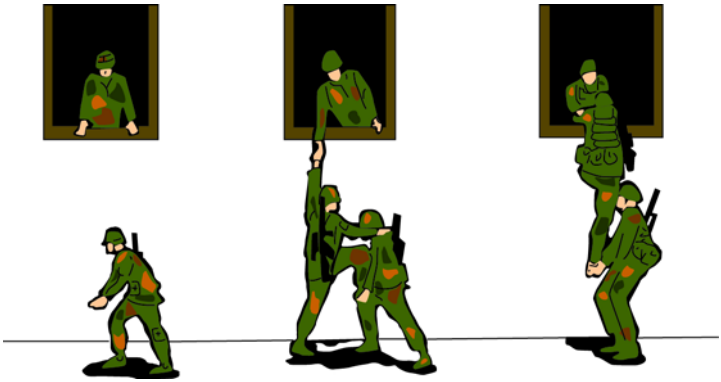


Figure 3–5: One-man Lift

3.20 One- or Two-man Pull. The one- or two-man pull (see Figure 3–6) is used to assist soldiers up to a higher point, particularly the last soldier of a group. The technique is carried out as follows:

a. One or more soldiers on an upper surface or in the entrance brace and reach out.

b. The lower soldier reaches up to the upper soldier(s). They grasp each other at the wrists. Standing above, another soldier may grasp the other wrist.

c. The upper soldier(s) pulls upward and back, using any free hands to push off the available surface.

d. The lower soldier pulls themself into the entrance.

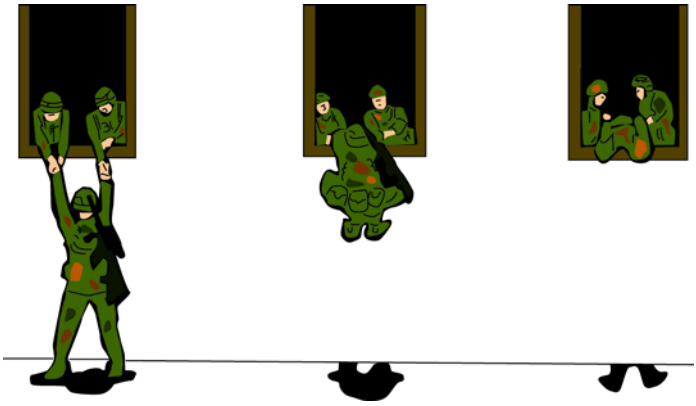


Figure 3–6: One- or Two-man Pull

3.21 Rope-assisted Access. Ropes or tapes are easily carried and can be used with other aids to gain access to higher levels. Ropes are also used to descend rapidly under control. To use ropes effectively, soldiers must develop special skills and upper body strength. Light synthetic ropes can be used for lifting or mechanical descending and a variety of other purposes. Where there is a need to ascend or descend by hand, thicker natural fibre ropes provide better grip. The main aids used with rope are as follows and described in paragraph 3.22 and paragraph 3.23:

a. *Grapnel.* A sturdy grapnel hook is used to gain access to windows and roofs. The hook should be padded to reduce noise and attached to a suitable length of rope of about 25 mm in diameter. Knots may be tied at 30 cm intervals to assist the grip but this will interfere with other uses of the rope, such as rapid descents. To carry out the technique:

(1) The thrower stands close to the building, holding the hook and several coils of rope in the throwing hand. The remainder of the rope is loosely coiled in the other hand.

(2) The hook is thrown with a gentle, even upward lob, paying out rope from open hands. A short length of rope may be used to increase the swinging radius.

(3) Once inside the window or on the roof, the hook is pulled until it gains a hold. On windows, the hook is pulled to a corner to ensure a strong bite and to reduce exposure to lower windows.

(4) The rope is climbed hand over hand with both feet on the wall. This method allows the climber to physically walk up the wall. The feet can be swung above the body to hook the legs over a window or to kick obstructions free. The disadvantage is that there is a greater pull away from the wall, increasing the chance of the hook becoming dislodged. Alternatively, the rope may be climbed in the conventional manner using a raised leg to grip the rope, which is then locked off between the feet. This method will allow the use of one hand for tasks such as placing a grenade or reaming a window, and the climber is able to keep closer to the building. For most climbers, knots are very helpful. As the climber approaches the hook the rope pulls in close to the wall and becomes more difficult to hold.

b. *Lodging Pendulum.* If a grapnel or any other means of access is not available, any object with a heavy end and a light shaft, such as a long-handled heavy hammer, can be used in an emergency as a lodging pendulum. A rope is secured to the end of the shaft and the object thrown over a wall or through a window. Tension should be maintained on the rope to pull the object back over or out. The shaft must be pulled back over the sill or top by the shaft swinging through an arc. The adjustment of the rope attachment and the length of shaft and weight provide a lodging pendulum that will be effective for specific circumstances. It is important to note that the

device must hang free behind the wall, unobstructed by other objects; in other respects, the device is used in the same way as a grapnel hook. Figure 3–7 depicts a lodging pendulum.

Figure 3–7: Lodging Pendulum (Reserved)

c. *Pole-placed Grapnel.* A light pole can be used to place grapnels in position quickly, reliably and relatively silently. The same pole may be used to ream glass from a window before climbing. Extendable poles are convenient to carry, and these may include tent poles, radio antennae or painters' poles. This is the preferred method of emplacing grapnels. Figure 3–8 depicts the pole-placed grapnel.

Figure 3–8: Pole Placed Grapnel (Reserved)

3.22 Rope and Tape Ladders. Rope and tape ladders aid climbing by providing a solid purchase for one or both feet. Such ladders include ropes or tapes tied or sewn in a ladder pattern, knotted twin ropes with rungs, and ladders with alloy rungs and steel cables. All types can be used with other aids. When climbing using free hanging rope ladders, stability can be maintained by placing one leg on either side of the ladder with heels inserted. Tape ladders when collapsed can be used as for expedient fast roping for descents of less than 10 m. Figure 3–9 depicts an example of a rope ladder.

Figure 3–9: Rope Ladder (Reserved)

3.23 Rope Loops. Various uses may be made of short tape or rope loops or toggle ropes of about 2 m in length, such as the following:

a. hauling personnel or equipment;

b. securing windows and other access points to aid following troops;

c. slowing the descent of a soldier jumping down from one floor level to another, normally by the rope being looped over a beam or bar and held during the jump to the lower level; and

d. improvising a harness for roping down.

3.24 Ladder and Pole-assisted Access. Ready-made and improvised ladders provide a simple means of ascent and descent. Smaller domestic models that are collapsible and can slot together are particularly useful for UO. While they lack strength for horizontal work, their multipurpose capability makes them valuable. Wooden ladders may be used for horizontal bridging; however, the grain must be checked to ensure that it runs fully along the side pieces. It is preferable that wire reinforcing is fitted. Ladders may be readily improvised from planks, beams and poles. Crosspieces or footholds can be nailed, screwed, cut, lashed, taped or welded. One simple improvisation is a plank with boot-shaped notches cut at intervals into the sides. In restricted spaces, ladders are generally awkward to handle and require at least two soldiers to carry them. To aid control, a line is secured to the top. Ladders may be used as follows:

a. *Ramp and Ream.* The ladder is first used to force a breach in a window, then provides the ramp for assault troops to run up and through the opening. Figure 3–10 depicts the ramp and ream technique. To carry out the technique:

(1) The ladder is carried to the window and thrust forcefully to smash the top of the frame and the glass.

(2) The first soldier runs up the ramp formed by the ladder, their weight forcing the ladder down to clear glass remaining in the window frame.

Figure 3–10: Ramp and Ream Technique (Reserved)

b. *Side Positioning.* A ladder is used in the conventional manner to enter an upper level. Figure 3–11 depicts the side-positioning technique. To carry out the technique:

(1) The base of the ladder is carried horizontally into position and placed so that when the ladder is raised the top will be to one side of the selected POE and clear of any windows at lower levels. This avoids any unnecessary exposure.

(2) One soldier anchors the base while others lift the ladder into position to the side of the entry point. For ease of entry, the ladder should reach past the top of the window or at least 60 cm beyond any gutter or roof edge. The only exception is where a roof may be observed, in which case the ladder top needs to be positioned below the roofline to avoid detection.

(3) The first soldier climbs the ladder until the feet are either level with the windowsill or just below the roof edge. From there the soldier can observe and use any tools or weapons before stepping off or swinging themself up onto the roof or into the window, keeping low. The remaining soldiers follow close behind.

Figure 3–11: Side-positioning Technique (Reserved)

c. *Ladder Descent.* Ladders can also be used for rapid descents. The feet and hands are placed outside the rungs and the soldier slides down the supports under the control of friction. Ladders may be suspended as well as supported, and used either outside of buildings or in interior areas such as lift shafts or cavities caused by explosions.

d. *Ladder Bridging.* Ladders are useful for bridging gaps between the roofs of buildings, walls, open drains, wire obstacles and minefields around buildings. Naturally,

ladders used for this purpose need to withstand horizontal loadings. To carry out the technique:

(1) Under cover, the ladder is laid horizontally with the forward part resting on a pole held between two soldiers and the rear held by a third soldier.

(2) The soldiers run from cover towards the bridging point. As they near the point, the forward soldiers raise their pole. They halt at the home edge of the obstacle and apply a lifting force.

(3) The third soldier keeps running and pushes downwards, imparting an angle to the ladder.

(4) The ladder falls across the obstacle and the third soldier runs straight over it.

(5) The other two soldiers follow.

(6) Alternatively, the forward end of the ladder can be raised using a rope looped high over a supporting structure and back to the area of cover.

e. *Pole Push.* A ladder or pole may be used to place a soldier very rapidly through an elevated opening. To carry out the technique:

(1) A length of strong pole, beam or ladder is held firmly by one soldier at the forward end and two or more soldiers at the rear.

(2) The team runs towards the wall to be scaled.

(3) As the lead soldier reaches the wall, they leap, still holding the pole, and raise their feet as high as possible on the wall.

(4) The rear soldiers continue to push on the pole towards the wall, which forces the forward end of the pole and the soldier upwards. This enables the soldier to walk up the wall.

(5) On reaching the opening, they kick their feet inside or astride the sill and pull themself inside with both legs and arms.

(6) The following soldiers climb the pole/ladder or a rope suspended from the top of the pole.

f. *Pole Suspension.* A pole may be used to suspend a rope or rope ladder. The rope is fixed to the top of a pole, which is placed so that the top reaches above the elevated opening to be entered. The rope or rope ladder is mounted as described earlier.

g. *Ladder Litter.* It is often difficult to move casualties from confined spaces. Similarly, it is often impossible to pass stretchers around corners and through doorways. On the ground, first and second floors, it may be easier to evacuate a casualty by a ladder inserted through an outside window. To carry out the technique:

(1) The area is secured from interference. Screening may be achieved by smoke.

(2) A ladder is inserted through an outside window and the top end pulled inside a sufficient distance to allow the ladder to be brought down and held horizontally.

(3) The casualty is secured to the ladder towards the midway position.

(4) The ladder is pushed back out through the window, its angle controlled by pressure on the inside/top end.

(5) The ladder is lowered under control both from the bottom end and by tension on a rope tied to the foot.

SECTION 3-3. MANUAL BREACHING

Manual Methods of Breaching Fences

3.25 Reconnaissance. Prior to penetration, a reconnaissance should be conducted to determine the best location for breaching. Holes, vegetation growing near the fence, poor-quality locks on gates, burned-out security lights and obvious dead spaces are some of the preferred locations. Once the breaching site has been determined, it may be necessary to leave a security element if it is planned to withdraw via the same location.

3.26 The three types of fences are boundary fences, temporary fences and perimeter fences. Boundary fences are light and easy to cross and are not considered barriers. Temporary fences are normally constructed of wire mesh and steel poles that are not permanently anchored. Perimeter fences are of a sturdy construction and may be made from such materials as galvanised steel posts, chain-link mesh, barbed wire or razor tape. Fence rails and hardware are usually located inside the fence, with posts set in concrete. These fences normally require effort and the appropriate tools to breach.

Methods of Fence Penetration

3.27 The assaulter usually has three options to breach a fence: to go over, to go under or to go through. The various methods for going over a fence are as follows:

a. *Ladders.* Ladders are used as previously taught; however, a second ladder is usually required for the descent, unless a folding ladder is used. Figure 3–12 depicts the use of a ladder breaching a fence. The advantages and disadvantages are:

(1) *Advantages.* Ladders provide the quickest and easiest means of going over a fence.

(2) *Disadvantages.* The ladder itself is cumbersome: it must be of the correct length and it can be noisy.

The profile of the soldier crossing is also accentuated and they will be more easily visible.

Figure 3–12: Fence Breaching – Ladder (Reserved)

b. *Carpet.* A carpet can be thrown over the fence to protect climbers. Figure 3–13 depicts the use of carpet to breach a fence. The advantages and disadvantages are:

(1) *Advantages.* Carpet reduces noise, has a lower profile than a ladder and is relatively easy to infiltrate with, depending on the type and length of carpet.

(2) *Disadvantages.* Infiltration may be difficult in air and water operations. The carpet may be difficult to retrieve and may leave behind physical evidence.

Figure 3–13: Fence Breaching – Carpet (Reserved)

c. *Pipe Lengths on Corners.* Metre-long pipes/poles may be inserted on corners to form a ladder that can be climbed. Pipes should ideally be made of aluminium to save weight and wrapped in tape to reduce noise. Where pipes are not available, suitable timber may be used. The advantages and disadvantages are:

(1) *Advantages.* Pipes are portable and can be dual-purpose; for example, threaded pipes can be joined together as stretcher poles.

(2) *Disadvantages.* Pipes are cumbersome and add to the soldier's equipment load.

Figure 3–14: Fence Breaching – Pipe Lengths on Corners (Reserved)

d. *Ladder Steps.* These are made of lightweight material and can be hooked onto the fence to provide footholds. They should also be taped to reduce noise and are

normally used in conjunction with carpet. The advantages and disadvantages are:

(1) *Advantages.* Ladder steps are light, portable, and easy to use and recover.

(2) *Disadvantages.* Fabrication requires some skill.

3.28 Going under a fence reduces the visible profile of the assaulters and usually leaves less sign of the infiltration; however, it requires more time to prepare, especially if the wire is anchored at the base. Figure 3–15 depicts a technique for going under a fence. Some of the methods are as follows:

a. *Winching.* A tie-down strap is commonly used to raise the wire by attaching it to the top and bottom of the fence and working the handle. Any ties securing the mesh to the bottom strand of wire must first be cut. These can be replaced later if necessary. The advantages and disadvantages are:

(1) *Advantages.* It is quick and easy to use.

(2) *Disadvantages.* The strap is noisy and is hard to remove quickly.

b. *Improvised Lifting Devices.* These incorporate a mechanical advantage system that can be easily made out of tubular tape/rope and karabiners. These are easily carried and can be used for other purposes. Poles can also be used for lifting the mesh by inserting the pole under the fence and lifting by hand or using a lifting device.

Figure 3–15: Fence Breaching – Underneath (Reserved)

3.29 To cut a chain-link fence, start at the bottom and, working up in a straight line, cut every second strand of wire until a hole big enough for the largest man is made. A length of mine-marking tape or cloth can be carried and used to wrap each strand prior to cutting in order to reduce the noise. The edges of the hole can be secured with karabiners for ease of transit. The hole

may be repaired later if required, although the damage will not stand close scrutiny. Figure 3–16 depicts the technique for cutting a chain-link fence.

Figure 3–16: Fence Breaching – Cutting Chain-link (Reserved)

3.30 Barbed Wire/Tape. Several types of barbed obstacles may be used to enhance a perimeter fence or defences surrounding a stronghold. These are as follows:

a. Dannert wire;

b. concertina wire;

c. general purpose barbed tape (razor tape); and

d. barbed tape concertina.

3.31 The following are several methods of negotiating these obstacles manually; however, a check for booby traps or early warning devices placed inside the wire should always be conducted first:

a. *Pulling.* The wire can be pulled to one side using S-shaped hooks and rope.

b. *Going Under.* It may be possible to raise the wire using poles, prop it up with Y-shaped stakes and crawl under it.

c. *Cutting.* The wire may be cut using fencing pliers; however, gloves and eye protection should be worn.

d. *Going Over.* Carpet or similar material, ladders or planks may be used to allow access over the wire. This may be difficult if the platform being used to cross the wire is unstable.

3.32 Building Entry. A variety of barriers may have to be penetrated in order to enter a building. These could include doors, windows, roofs, ceilings, walls and floors. Some of the methods or tools that are available to aid in this are as follows:

a. *Ballistic Breaching.* This involves the use of weapons and/or explosives to conduct the breach.

b. *Hand Tools.* This covers the use of sledgehammers, crowbars, axes, machetes, shovels, battering rams, window swords and so on.

c. *Power Tools.* There are a variety of commercially available tools such as petrol powered saws and small, electric metal cutting saws with rechargeable batteries. If using power tools, a backup means must always be carried to ensure penetration.

d. *Specialist Tools.* These include lock picks, thermal lances or blowtorches and hydraulic tools.

Doors

3.33 Door Appreciation. Before breaching, it must be determined whether the door opens inwards or outwards. This will determine the type of tool to be used for entry. If the hinges are visible, the door will normally open outwards.

3.34 Generally, doors are considered one of the weakest parts of a structure. There are many different types of doors, constructed from a variety of materials. The two most common categories of door, wooden and security doors, are covered in this section.

3.35 Wooden Doors. These may be internal or external doors. Internal doors, commonly called hollow-core doors, are usually constructed of thin panelling enclosing a cardboard filler. They are very weak and easily breached. External doors are either solid or filled with a glue/woodchip mixture. They are designed to hinder break-in.

3.36 Breaching Wooden Doors. Wooden doors can usually be breached by a physical attack with a sledgehammer or crowbar. Inward-opening doors may be breached by repeated blows on the doorknob. Alternatively, the hinges may be attacked. Hinges are normally located one handspan from the top and bottom of a door. There may also be a central hinge. Repeated blows in these areas will eventually breach the door. Ensure that the hammer is recovered after use and carried with the team. Figure 3–17 and Figure 3–18 illustrate the techniques for breaching wooden doors and windows.

3.37 An outward-opening door can be breached by inserting a crowbar in the crack between the door and the frame in the vicinity of the knob and levering it open. With some doors, a bayonet, machete or entrenching tool may suffice.

3.38 When breaching, a relief soldier should be prepared to take over the sledgehammer, a cover soldier should be provided and breachers should keep out of the doorway as much as possible. Weaken the door first with small arms fire (SAF) if necessary.

Figure 3–17: Door Breaching – External Opening (Reserved)

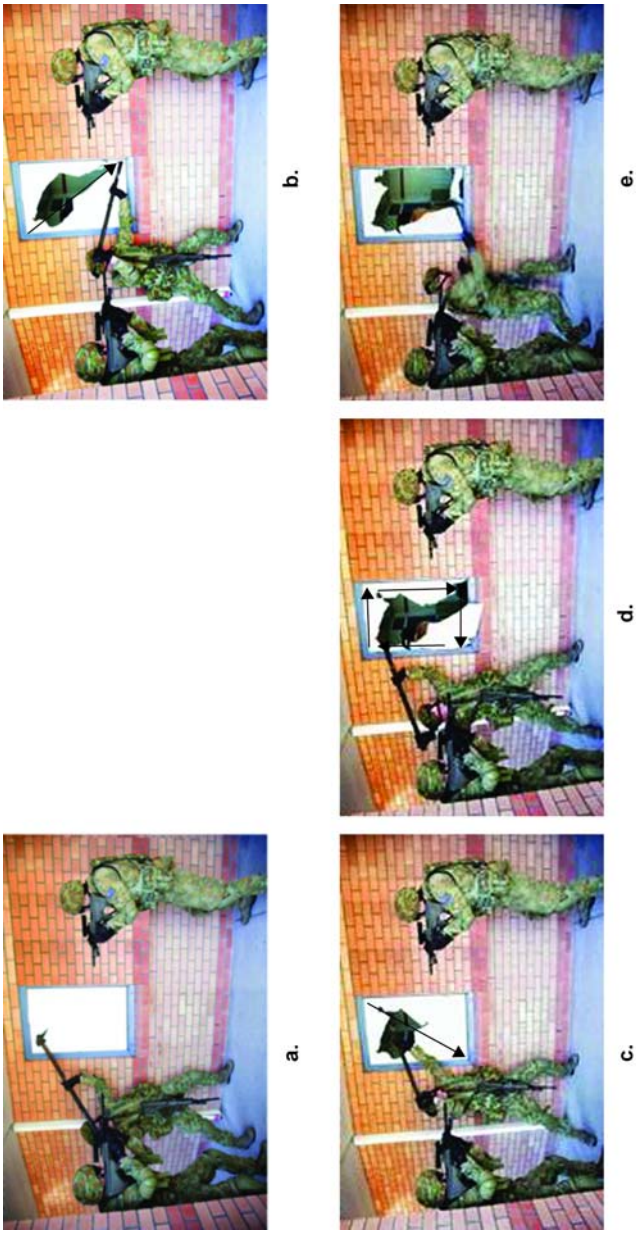


Figure 3–18: Window Breaching – Internal Opening

3.39 **Security Doors.** Security doors are normally constructed of sheet metal panelling filled with a sound-deadening filler. They are much more difficult to breach, and power tools or specialist equipment such as cutting torches or saws may be required. If hinges are visible, it may be possible to take out the pins or attack them with a hammer and cold chisel. If using a sledgehammer, weaken the vital areas of the door with SAF prior to the attack.

Windows

3.40 Windows in urban areas will be present in a wide variety of shapes, sizes and materials. They are not the ideal entry point, as they tend to hinder the speed of entry. Many windows will have flyscreens or security screens fitted, and heavy curtains or vertical blinds inside the room may hamper movement. However, they do provide an alternative method of entry and their utility as entry points should not be discounted.

3.41 The window glass may consist of the standard glass in varying thicknesses or it may be laminated, cyclone, perspex, wire-impregnated, bulletproof, double-glazed or safety glass.

3.42 Standard glass can be removed using a window reamer or similar object; however, protective clothing and eyewear are required. The technique is first to smash the pane using diagonal blows and then ream around the inside of the frame to remove the remaining glass. Care should be taken to ensure that all glass is removed, as a small shard left behind can cause serious cuts. Figure 3–19 illustrates the technique for smashing and reaming a window.

3.43 Toughened glass may require an attack with a sledgehammer or an axe.

3.44 High-velocity rounds striking glass will normally just make a neat hole. The best method to strip glass from a window is to fire multiple rounds at the top edges and corners, working downwards to clear the glass from the edges.

Figure 3–19: Smashing and Reaming a Window (Reserved)

Roofs

3.45 Roofs may be constructed using terracotta tiles, slate, fibrocement or sheet metal. There are a variety of methods of gaining access through a roof, as follows:

a. *Tiles or Slate.* Tiles or slate may be removed or smashed with a sledgehammer. The battens beneath the tiles will also have to be broken to allow entry.

b. *Fibrocement.* Fibro is easily smashed by attacking the space between the rows of nails with a sledgehammer. Care should be taken to stand on the nail rows (marking where beams are located) while working on a fibro roof.

c. *Sheet Metal.* Sheet metal roofs can be penetrated by using an axe, machete, entrenching tool or power saw to cut through the metal. Two cuts are required at right angles across the sheet of metal, starting from the exposed edge. The cuts should be made along two adjacent nail rows, after which the section of metal can be peeled back.

3.46 An alternative method is to undo the screws, if used, with a cordless drill and lift a sheet of metal. Once a hole has been breached, chicken wire and insulating material may also be encountered, and this will require cutting or removal.

3.47 When entering through the roof, care should be taken to step onto rafters, as most ceilings are non-structural and will not support the weight of an equipped soldier.

Ceilings

3.48 Ceilings are usually constructed of plaster and are easily breached by cutting or smashing between the rafters. Electrical wiring must be avoided during this procedure.

Walls

3.49 Walls are classified as being either interior or exterior, as follows:

a. *Interior Walls.* These are usually softer than the exterior walls. In many cases they are made of gyprock or plaster, which is easily cut or smashed. Identify the positions of the studs by locating joints or nail rows and attack between these areas. Do not work in the vicinity of power points or light switches if the building power is still on.

b. *Interior Masonry Walls*. Interior masonry walls are usually of only a single thickness, and these can be easily breached with a sledgehammer, especially if the intended corners are weakened by small-arms penetration. Start from the top and work down.

c. *Exterior Walls.* Exterior walls are usually of a more solid construction. This may consist of masonry, fibro, weatherboard or sheet metal. These can be attacked in a similar fashion to interior walls or metal roofs; however, they will require more work to penetrate.

Floors

3.50 The only circumstance in which entering through a floor is practicable is that of a wooden-floored building that is sufficiently elevated to allow access underneath. This method is not recommended when fighting in a building, as the attackers, being below the defenders, are at a distinct disadvantage. Power or hand tools may be used to cut or smash a way through the floor.

Equipment Maintenance and Preparation

3.51 All breaching equipment must be kept in excellent repair. Tools must be kept sharp and well oiled as required and should not be used for any other purpose other than breaching.

3.52 Equipment prone to making noise should be taped or otherwise muffled, and shining metal should be painted or dulled. Slings

should be fitted to larger tools and equipment for ease of carriage.

3.53 Sharp-edged equipment should have all cutting edges protected by tape or purpose-made coverings. This will protect the user and others from cuts in transit and preserve the tools' cutting ability.

Rehearsal

3.54 The most important factor in barrier penetration is to rehearse with the equipment to be used against the targets encountered. This will ensure that the intended method will actually work and will aid in planning by accurately assessing the breaching time.

SECTION 3-4. BALLISTIC BREACHING

Attacking a Door

3.55 **Shotgun.** If a shotgun is to be used to breach a door, the lock and hinges must be targeted. Figure 3–20 indicates the points of aim. Attack the lock and hinges as follows:

a. *Lock.* The point of attack is the area between the lock and the doorjamb. Never target the doorknob, as this will jam the lock. The muzzle of the gun should be placed at right angles or pointing downwards directly on the surface of the door, or as close to it as possible, to minimise splashback. Once the door has been breached, a strong kick in the vicinity of the lock may be required. There may be other locking mechanisms such as security chains or bolts.

b. *Hinges.* The hinges are a more positive point of attack, as they allow one side of the door to be removed completely, thereby bypassing any alternative locks. If not visible, most hinges are located approximately one handspan from the top and bottom of the door. There may also be a central hinge. The muzzle should be placed on the surface at an angle of 45°.

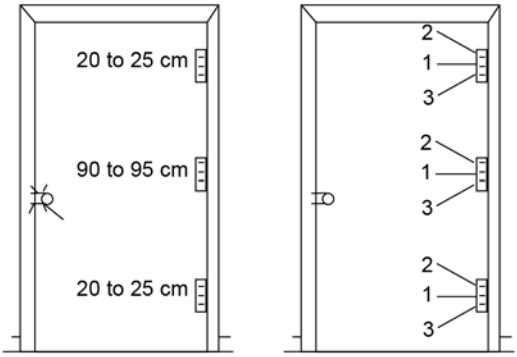


Figure 3–20: Door Breaching – Shotgun Points of Aim

3.56 Small Arms. SAF can also be employed as an effective way of weakening doors to allow for easier entry by the assault element. The areas of attack are the same as for a shotgun; however, the advantage of being able to apply the fire from a distance is available.

WARNING

The use of small arms (5.56 or 7.62 mm) as a ballistic breach on doorknobs and hinges is unsafe and should be used only as a last resort.

3.57 Ballistic (Shotgun) Breach. The order of movement for a shotgun breach has the gunner up front, followed by the No. 1, the No. 2 (team leader), and then the No. 3. After the door is breached, the gunner moves to the rear of the line-up and assumes the position of the No. 4.

Employment of Other Weapons

3.58 M72A6 Light Defensive Fire Support Weapon. The 66 mm LDFSW can be employed in its secondary role against fortified positions. When used for this purpose, the natural tendency to fire at the opening must be avoided, as the projectile may pass

through and detonate on the far wall, losing much of its effect. To maximise the effect, the correct point of attack should be approximately 30 cm below or to one side of the opening.

3.59 The M72A6 is less effective as a breaching round against walls, as the shaped charge tends to make only a small hole. The capability of the 66 mm against doors has yet to be tested. This could easily be done on the antitank range, and it may well be discovered that the launcher is a useful tool for breaching doors from a distance.

SECTION 3-5. EXPLOSIVE BREACHING

WARNING

The use of explosives should be undertaken only by those who are appropriately trained in their use.

3.60 An integral part of precision room clearing is the ability to gain quick access to the rooms to be cleared. Breaching techniques vary based on the type of construction encountered and the types of munitions available to the breaching element. The use of explosives for breaching has both advantages and disadvantages when compared to mechanical means as follows:

a. *Advantages.* The advantages include:

(1) A relatively low weight of stores is required compared with those for mechanical breaching.

(2) The shock of the breach will add to the speed, surprise and violence of the assault, potentially incapacitating those inside the objective.

(3) This method provides a quick way of gaining entry.

(4) The breach may also detonate any booby traps.

(5) This method provides the opportunity to detonate multiple breach sites simultaneously.

b. *Disadvantages.* The disadvantages include:

(1) It may be difficult to assess the appropriate size of charge to be used.

(2) An explosive breach may cause secondary explosions (due to gas, fuel or other prepared demolitions) and may also start secondary fires.

(3) Fragmentation may cause injuries to the assaulting troops and noncombatants.

(4) Overpressure generated by the blast may cause injuries to assaulters and noncombatants.

(5) Smoke and dust from the explosion will limit visibility.

3.61 Advice should be sought from the supporting engineers in regard to the methods of construction of the target and the most suitable size of charge necessary to breach it. *LWP-G 3-6-6, Demolitions* contains descriptions of several differing types of charges for different targets that can be prepared by combat engineers or other appropriately trained soldiers.

3.62 Where possible, it is desirable for the lead and/or breaching FT to contain soldiers who are trained and proficient in the techniques of explosive breaching in order that they can correctly position, arm and fire charges successfully.

Principles of Explosive Breaching

3.63 In general, walls are best breached where an opening already exists (eg, doors and windows). The wall will already have structural members in place to distribute the load, and the door or window will most likely be constructed of material that is easier to breach than the wall. Conversely, areas immediately adjacent to an opening are normally the strongest.

3.64 Explosive loads should be dispersed among soldiers to ensure that no individual is overburdened and to prevent compromise.

Charges can be redistributed as necessary once a foothold has been gained.

3.65 A secondary means of gaining entry (such as mechanical) should be planned for, should the explosive breach not be successful.

3.66 Safety should always remain a prime concern. Charges are not to be primed until ready for use and a safe firing point identified. The location of a safe firing point will depend on the following:

a. the explosive weight of the charge,

b. the environment surrounding the breach site,

c. the material of the target, and

d. the distance of personnel from the charge.

3.67 The following guidelines should be used:

a. *Minimise the Blast Hazard.* To minimise the blast hazard:

(1) Increase the distance between personnel and the charge.

(2) Place personnel at 90° to the blast.

(3) Ensure that personnel are not placed in front of walls that will reflect the blast.

(4) Ensure that, if explosives are being used in enclosed areas, these areas have sufficient volume to allow the blast to dissipate without causing damage to personnel; if not, ensure that personnel are removed from the enclosed area.

b. *Minimise the Fragmentation Hazard.* To minimise the blast hazard:

(1) Use the minimum quantity of explosive required.

(2) Place personnel at 90° to the breach, ensuring that they have solid cover (as a minimum, the thickness of the structure being attacked).

(3) Ensure that all personnel are wearing the appropriate personal protective equipment.

3.68 Further guidance on minimising the blast and fragmentation hazard can be found in *LWP-G 3-6-6, Demolitions* and *LWP-CA (ENGRS) 4-3-2, Blast and Ballistic Effects*.

Mouse-holing

3.69 Mouse-holing is used to create entry points or concealed routes in structures in either offensive or defensive operations. They can be created using mechanical or explosive means.

3.70 A readily available means of creating a mouse-hole is to use the M18A1 Claymore antipersonnel mine. The mine is particularly effective on internal walls, and should be tamped with sandbags and packed to remove air voids so as to increase the explosive effect and protect personnel from fragmentation. Figure 3–21 illustrates the tamping of a mine to breach walls.

WARNING

Breaching any wall runs the risk of exposing uninsulated live electrical wires and rupturing gas pipes. To reduce the chance of electrocution and gas explosion to assaulting troops, electricity and gas services should be disconnected prior to wall breaching. Suitable personal protective equipment should also be worn.

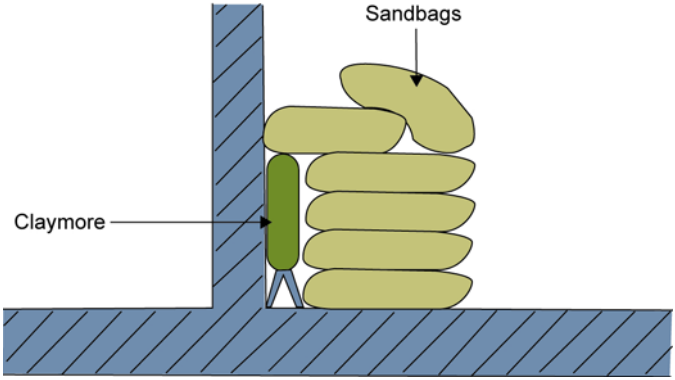


Figure 3–21: Tamping an M18A1 Claymore to Breach Walls

3.71 Failure of an Explosive Breach. The most common failure in breaching residential walls with explosives results from removing the siding or drywall but leaving the studs intact. The greatest obstacle to explosive breaching is the lack of knowledge of how the wall is constructed and how this knowledge can affect how to proceed. Considerations are as follows:

a. Walls are not often of consistent density.

b. Stucco walls consist of cement, wire, studs, insulation and plasterboard.

c. Masonry walls consist of the masonry material and reinforcing bars (up to 12 mm diameter for iron bars).

d. A lack of consistency in the material requires that the charge be tailored for the particular wall.

e. If there is too much explosive material the room becomes dangerously over-pressured.

f. Too little explosive results in not all the building material being removed.

3.72 Force Protection. Soldiers must take care when fabricating, carrying and using explosive breaching charges. Commanders must ensure that all standard procedures and precautions outlined in doctrinal and training material for demolition activities are followed. This is dictated by more than just the commander's concern for the safety and welfare of the individual soldiers. Accidental or premature detonation of demolitions during combat can not only injure or kill friendly soldiers but also jeopardise the mission. During combat, soldiers often need to position themselves close to breach points to enter quickly and overcome enemy resistance before the effects of the explosion subside. However, a soldier who is too close to an explosion and injured by flying debris becomes a casualty. Fire and extreme dust may be encountered, preventing movement, and therefore must be planned for. CT must be able to accomplish their mission in urban terrain without sustaining friendly casualties from their own demolitions.

SECTION 3-6. BUILDING MARKING

3.73 CT have long identified a need to mark specific buildings and rooms during operations in urban environments. Sometimes rooms need to be marked as having been cleared, or buildings need to be marked as containing friendly forces. Chalk has been the most common marking material. It is light and easily obtained but not as visible as other markings, detailed as follows:

a. *Spray Paint.* Canned spray paint is easily obtained. It comes in a wide assortment of colours, including fluorescent shades that are highly visible in daylight. It is not removable once used. However, the spray cans of paint are bulky and hard to carry with other combat equipment. Paint is not visible during darkness, nor does it show up well through thermal sights.

b. *Marker Panels.* Marker panels can be used to designate entry and exit points, limits of exploitation and specific

structures within the operation. They may also be used to convey prearranged messages.

c. *Chemical Lights (Cyalume).* Cyalume lights may be used in visible marking at night in accordance with the NATO marking system. It is used in a similar application to the marker panels. IR cyalume may be used where visible light is detrimental to the operation. In this application they are visible to night-vision devices.

d. *Strobe.* Used to mark and identify friendly positions, strobes can be utilised in the IR/invisible mode. The strobe may be used as a directional beacon when utilised with the flashguard. The use of the IR strobe has the potential to be mistaken for hostile fire. Other IR devices (eg, TAG IR) may be used in a similar manner.

e. *Tape.* Tape of any description, as long as it is visible, can be used to improvise markings. The markings are still to be in accordance with NATO marking methods. Reflective (both light and IR) and luminescent tapes are the most commonly used.

f. *Wolf Tail.* A 'wolf tail' (see Figure 3–22) is a simple, effective, easy-to-make, lightweight device that can be used to mark buildings, doorways and windows. It is easily carried in map pockets and, when used in accordance with a simple, well-understood signalling plan, can aid in C2, reduce the chances of fratricide and speed up casualty collection. It can be recovered easily and re-used if the situation changes. All the components are readily available. It combines a variety of visual signals (coloured strapping and one or more cyalume chemical lights of varying colours) with a distinctive heat signature that is easily identified through a thermal weapon sight. IR cyalume can be used either as a substitute for the coloured cyalume or in addition to it.

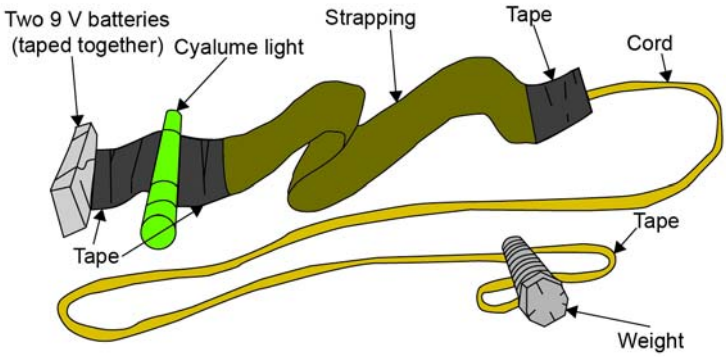


Figure 3–22: Wolf Tail

Construction and Use of a Wolf Tail Marking Device

3.74 Construction of the wolf tail marking device requires the following material:

a. a 2-foot length of nylon strap of the type used for cargo tie-down;

b. approximately 1.5 m of nylon cord;

c. a small weight such as a bolt or similar object;

d. duct tape;

e. a cyalume chemical light (coloured and/or IR); and

f. two 9 V batteries.

3.75 **Assembly.** Assemble the items by tying or taping the cord to the small weight. Attach the other end of the cord to the nylon strapping, securing it with duct tape. Attach the 9 V batteries in pairs to the lower end of the strapping with several wraps of duct tape, making sure that the negative terminals are opposite the positive but not actually touching. Use more duct tape to attach the cyalumes to the strapping, approximately 3 cm above the batteries.

3.76 **Position Marking.** When the position needs to be marked, the batteries are pushed together firmly until the male and female plugs lock. This shorts out the batteries, causing them to heat rapidly. The batteries are thus easily identified through the thermal sights of tanks or AFV. The batteries will remain visible for about 45 minutes.

3.77 Activating the cyalume provides an easily identified light source visible to the naked eye. IR cyalume may be used if night-vision devices are available. The cord and the small weight are used to hold the wolf tail in position by tying or draping it out of windows or in doorways, where it may be most visible to friendly troops. The numbers and colours of cyalumes may be varied and used to denote particular teams, sections and so on.

3.78 **Medical.** Medical personnel may carry a standardised variation that can be used to clearly identify a building as containing wounded personnel needing evacuation. This may consist of a white strap with multiple red cyalume sticks or any other easily identified combination.

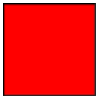
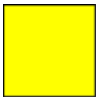
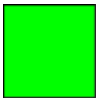
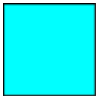
North Atlantic Treaty Organization Standard Marking

3.79 NATO has developed a standard marking SOP for use during urban combat. It uses a combination of colours, shapes and symbols. These markings can be fabricated from any material available.

3.80 **Daylight Exterior Markings.** Daylight exterior markings, in accordance with NATO SOP, are 30 x 30 cm and as detailed in Table 3–1. Progress through the building should be marked with lengths of mine-marking tape hung out of every window. This will prevent fratricide and allow the SBF to follow the progress of the manoeuvring elements.

3.81 All night markings are two cyalume sticks on a ‘double arm’s-length’ of mine-marking tape hung in a window or doorway.

Table 3–1: North Atlantic Treaty Organization Standard Exterior Daylight Marking

Colour	*Meaning*
	Red, entry point
	Yellow, medic needed
	Green, building clear
	Blue, booby trap(s)

3.82 Standard Interior Markings. Interior markings for symbols, shown in Table 3–2, may be made with paint, chalk, camouflage cream or any other writing material, but they should be semipermanent and not affected by moisture. Interior markings by colour, shown in Table 3–3, should be provided in taped-up cyalume and placed in the open doorway of cleared rooms and at the entrance-way to uncleared rooms or rooms with identified threats.

Table 3–2: North Atlantic Treaty Organization Standard Interior Marking

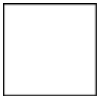
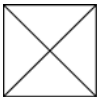
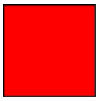
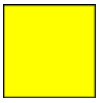
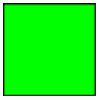
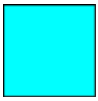
Symbol	*Meaning*
	Entry point
	Room clear
	Location of POW
	Medic needed
	Booby trap

Table 3–3: Standard Method of Marking Interior Rooms with Cyalume

Colour	*Meaning*
	Red, Danger Enemy, uncleared room
	Yellow, Medic needed Friendly, CCP
	Green, Clear Cleared room
	Blue, Item of interest Possible booby trap(s), exploitation material

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CHAPTER 4

OFFENSIVE TACTICS, TECHNIQUES AND PROCEDURES

Not only was the force poorly trained, it also was undermanned. On the eve of the operation, Grachev apparently had a force of some 38,000 men, only 6,000 of whom entered Grozny on New Year's Eve. Dudayev is believed to have had 15,000 men in Grozny. This means that the 6:1 force ratio desired for attacking a city (a doctrinal norm derived from combat experience in World War II) clearly was not attained. On the contrary, the correlation of forces was 1:2.5 against Russian forces at the start of combat. In addition, the force that entered Grozny was a composite force, with some battalions composed of members from five to seven different units. Crews often hardly knew one another. One Russian officer noted that a rehearsal for taking a built-up area had not been conducted in the last 20 to 25 years, which contributed to decisions such as sending the force into the city in a column instead of in combat formation. These facts, combined with the bad weather, the hasty political decision to enter the city, and the lack of training, offered the Russian force little chance for quick success.[1]

SECTION 4-1. INTRODUCTION

4.1 A deliberate attack is required for larger urban tasks. All urban penetration and most urban sweep operations will be deliberate attacks because of the regrouping needed. The deliberate attack seeks a decisive engagement of selected or all enemy forces within an urban sector(s). The basic considerations and conduct of the attack as described in *LWD 3-0-3, Land Tactics* [Chapter 3] are relevant.

1. Thomas, T. L., 'The Battle of Grozny: Deadly Classroom for Urban Combat', *Parameters,* Volume 29, No. 2, pp. 87–102, Summer 1999.

4.2 The German offensive in Stalingrad during World War II highlighted the increased requirements for mission planning, FE structure and regrouping, and the weapons and explosive munitions requirements. It also stressed the increased impact of the complex terrain on all activities.[2]

4.3 This chapter provides guidance on techniques and drills required for the urban attack at or below CT level. It concerns mainly the actions on or around objectives that consist of a single building or small groups of buildings. The planning and execution of urban advances, attacks and pursuits are described in legacy publications.

4.4 This chapter describes the following:

a. organisation and grouping,

b. techniques for urban attack,

c. fire support in urban attack, and

d. assault and support tasks.

Assault with Restricted Rules of Engagement

4.5 In many urban activities, the use of weapons is restricted. Limits will almost certainly be placed on the use of air support and indirect fire. There may be a prohibition on the use of automatic fire or grenades. For attacks conducted under these restrictions, the same basic drills are used, modified as necessary. There are a number of considerations for planning building assaults that seek to offset the disadvantages of weapon restrictions.

2. For more information on the World War II German offensive in Stalingrad see Lewis, S. J., 'The Battle of Stalingrad' in *Urban Operations: An Historical Casebook,* at http://www.globalsecurity.org/military/library/report/2002/MOUTLewis.htm, accessed 18 February 2013.

4.6 In attacks with restricted ROE, additional considerations are as follows:

a. *Distraction and Observation.* Smoke is thrown around the building to screen movement and disorientate defenders.

b. *Surprise.* When firepower cannot be used to achieve surprise, the primary means for keeping a defender unbalanced is to use deception.

SECTION 4-2. ORGANISATION AND GROUPING

4.7 The nature of urban activities will dictate the organisation of combined arms teams at the section or FT level. The requirement for increased protection and lethality at the smallest grouping level necessitates the establishment of the combined arms teams.

4.8 The section and section groups are the prevalent element in the conduct of offensive activities in the urban environment, as the limitations imposed by the terrain limit the effects of mass. This will necessitate the adoption of the combined arms effect at this level. Wherever possible the section should be supplemented by supporting elements.

4.9 The CT commander must consider the allocations of groupings to these additional tasks. Assault and FSP tasks are generally key tasks and are allocated around existing organisations and the main command structures. Troops are both attached to increase capabilities and detached to perform other tasks, often under the command of CT 2IC. In the planning process, the following factors need to be considered:

a. *Group Integrity.* The urban battle is very demanding of both leaders and soldiers. When time allows, group integrity should be maintained.

b. *Deployment Scope.* Variations will occur in the scope for deploying given sizes of CT to activities. There will be a general requirement for various assault and support

teams to deploy in parallel to provide mutual fire support. This 'pairing' clashes with the three-manoeuvre-element model upon which the current infantry structure is based.

c. *Reserve.* For urban activities, the reserve force may need to be larger than that normally planned for due to the larger array of threats experienced.

Section Groupings

4.10 The section can be task-organised, depending on manning levels and the allocated supporting elements. The section group can consist of any combination of infantry and support elements that enable the establishment of clearance and FSP groupings. Supplementation may come in the form of AFV, combat engineers, support company elements, MP and so on.

4.11 Examples of basic groupings are as follows:

a. *Assault Groups.* Assault groups systematically clear rooms, buildings or parts of large buildings by bounds and consist of a commander and one or more clearing teams. Clearing teams consist of two, three, four or eight soldiers. They can be supplemented where possible by supporting elements to provide firepower, mobility and protection. The assault group needs to be able to provide its own rear protection.

b. *Support Groups.* Support groups sustain the actions of clearance groups. They consist of a commander and one or more support teams. Support groups may perform their tasks from outside a building or follow clearing teams to provide close support from inside. Support groups may consist of either one or both of:

(1) a security team for left and right flank protection consisting of two or more soldiers; and/or

(2) an isolation and FSP team comprising the section 2IC and a fire support soldier with a light support weapon or grenade launcher (isolation and FSP may be provided by AFV, especially the weapon

systems provided by tanks and Australian light armoured vehicle).

4.12 It should be noted that the allocation of supporting assets at section level will bring complexity to the standard conduct of tasking.

Platoon Organisation

4.13 Platoons can be task-organised differently in urban activities. This may result in the platoon group being tasked in its entirety or as section and sub-section groups as detailed in the previous paragraphs. Additionally, the platoon organisation may increase in size and number depending on the allocation of supporting assets and the tasks allocated. Traditional ratios for assault and fire support may not apply to all urban scenarios; determining the appropriate ratio will entail careful analysis of the task by junior commanders as the level of complexity and span of command increases. A key consideration for the platoon is its ability to C2 this potentially larger and extended organisation.

4.14 Examples of potential groupings are as follows:

a. consolidated FSP, commanded by a platoon sergeant for maximisation of fire support;

b. six FT and a command element, each allocated an AFV;

c. a split platoon;

d. combat engineer splinter teams;

e. a joint offensive support team;

f. MP allocated for population control and investigation; and

g. the allocation of Army aviation LO at the platoon level to assist in the coordination of intimate fire support.

SECTION 4-3. TECHNIQUES FOR URBAN ATTACK

Command and Control

4.15 During urban attacks, C2 is often difficult to maintain. Some points to assist are as follows:

a. *Fire Support Positions.* The FSP elements occupy the positions ordered. From these locations, fire is applied to isolate the objective building, prevent enemy redeployment, and neutralise or suppress the objective and enemy support positions. If exposed, the entry point and approach must also be covered by fire.

b. *Secure Foothold.* After entry, a foothold is secured. On the signal that the foothold is secured, the remaining teams move up. Room clearance then commences. One soldier from the first group remains at the POE to provide a link with the teams that follow.

c. *Clearance.* The remainder of the building is then systematically cleared. Progress is marked by lights, flags or other means (see Section 3-6). Commanders follow the assault, closely coordinating the application of fire and redirecting troops as required. Soldiers are posted as sentries at stairwells and corridors. Each bound is consolidated before the clearance continues.

d. *Consolidation.* Once clearance is complete, those involved in the assault are passed by supporting troops so that administration can be completed. In this way gains are continuously consolidated and fresh troops are in place to face an enemy counterattack. Consolidation may also be carried out by the constant move forward of either the next assault element or FSP groups. Link men and sentries guide these groups forward to where they are required or to defend those approaches that cannot be covered by FSP groups outside.

e. *Reorganisation.* The key requirements for reorganisation are security and the efficient use of manpower, as

reorganisation is a time-consuming process. The commander must ensure that:

(1) all approaches are covered;

(2) teams are not bunched or left in vulnerable parts of the building (apart from sentries, the teams should be deployed one room or more back from walls adjoining other buildings or from walls that may be exposed to enemy direct fire weapons);

(3) the location of each team is known so that troops can be recalled rapidly and redeployed on subsequent tasks; and

(4) the team is in position to support attacks by flanking organisations.

4.16 The commander must continue to analyse their mission in accordance with the superior commander's intent in light of any new information that may now be to hand.

Grouping

4.17 For an attack within an urban sector(s), the following groupings are formed:

a. *Covering Force.* This group is tasked to invest or cordon off the urban area to isolate the enemy from external support and impose domination inwards from the perimeter. It may be based on an armoured reconnaissance unit.

b. *Attack Force(s).* This group is tasked to destroy the enemy or clear ground. It will be a combined arms force organised into three groups:

(1) *First Group.* This group is tasked to occupy footholds and lodgements and penetrate to key objectives. A highly trained unit may employ infiltration.

(2) *Second Group.* This echelon contains groups tasked to conduct thrust or sweep operations from

footholds secured by the first echelon. Elements of this echelon may have provided support for the first echelon to break into the urban sector(s).

(3) *Reserve.* This group is a combined arms group organised to exploit, pursue or reinforce depending on the risk assessment associated with the deliberate attack.

Attack Stages

4.18 As elements strive to accelerate the tempo of operations and shatter enemy cohesion, their sequence of attack stages may not conform to the progress of others in other sectors. The stages may have no transition delays and may even overlap. Typically, a deliberate attack within an urban sector(s) will contain the following stages:

a. *Preparatory Stage.* This involves reconnaissance and infiltration.

b. *Assault Stage.* This involves the concurrent use of:

(1) the imposition of isolation by cordon; and

(2) breaking in for the purpose of:

(a) securing lodgements, and

(b) penetrating secure key sectors.

c. *Exploitation Stage.* This involves the clearance out from lodgements to achieve focus of attention and assert control.

d. *Reorganisation Stage.* Regrouping occurs for the next task.

Preparatory Stage

4.19 The intent is to reconnoitre enemy positions, gaps in defences and approaches to ensure the security of lodgement or break-in. Key tools are imagery and long-range reconnaissance patrolling deployed close or into the urban sector. Patrols may also be deployed to OP and direct fire

support positions. Other patrols may secure approach routes, helicopter forward arming and refuelling points and FUP. For approaches on foot, elements may begin preliminary deployment around the urban area.

4.20 Factors that will require consideration are as follows:

a. the assets available at all levels;

b. local population locations, numbers, attitudes, loyalties and so on;

c. the potential difficulty in obtaining information in a timely manner, meaning that junior commanders need to be prepared to fight for information;

d. liaison considerations; and

e. the need for terrain-specific rehearsals.

4.21 The move to objective and other preliminary moves need to be considered in light of the following:

a. offensive support arrangements and timings;

b. routes (deception, secure passage, clearance to move from higher HQ, alternative routes such as underground, and through and over buildings and rooftops);

c. the best use of cover and concealment, the use of buildings and obscuration (smoke from offensive support, engineers, AFV, etc.); and

d. the securing of FUP, the marking of routes and areas, and the use of guides.

Assault Stage

4.22 The intent is to concurrently, or in very rapid succession, attack key objectives, isolate the area and break in at one or more locations. The purpose of concurrency is to achieve surprise, dilute the enemy response and initiate a high tempo. The area is cordoned, and gaps in the enemy's defences are exploited to break in and penetrate directly to objectives. Where gaps

cannot be determined, lodgements on the edge of the urban area are seized.

4.23 Isolation. The covering force isolates the urban sector by seizing key terrain and dominating the approaches. If enemy defences prevent complete encirclement, lines of communication are cut by fire. The covering force operates aggressively, seeks to exert domination into the urban sector and provides fire support to forces breaking into the sector. The following needs to be planned for:

a. isolation by physical means (the use of cordons, investment) or by fire (attack by fire, SBF);

b. the use of suppression against all possible threat locations in the three-dimensional environment; and

c. the use of sustainable suppression and fire control principles.

4.24 Break-in. The intent of a break-in is to insert a penetration force through gaps in the enemy's defence, or to seize a lodgement on the perimeter. The approach to break-in is a critical stage of the operation when the attacking force is most vulnerable. It should be concurrent with other manoeuvres and supported by a precision attack on enemy positions and active electronic warfare. It may involve deception by feints, demonstrations and fire plan. To cover exposed movement, direct fire support groups are deployed on both flanks to provide immediate covering fire and to isolate the target.

4.25 Break-in to Penetrate. An urban penetration is predicated on the identification or creation of a gap in the enemy's defences. The first echelon forces move straight into the urban area. Normal formations are used until urban terrain is reached. The support required to cover the break-in depends on the amount of concealment on the approach and whether speed or stealth is employed. Using stealth, the force moves on foot on one or more covered approaches, such as woods, re-entrants, watercourses and drains. Covering elements may remain concealed. Using speed, the force moves mounted on an

approach that is assessed to be weakly defended under cover of smoke and direct covering fire.

4.26 Break-in to Secure a Foothold. First echelon forces conduct attacks into perimeter areas to secure footholds for subsequent second echelon manoeuvres. This is a conventional attack except that urban techniques are employed for the final assault and clearing of objectives, and direct fire elements are normally required on both flanks of the attack. The following should be considered:

a. The successful clearance of a building is dependent on seizing and consolidating one or more footholds to use as firm bases. A foothold may be larger than a single room to allow the initial assault force to spread out and reduce its vulnerability. This also allows follow-on forces to consolidate and continue the clearance of the building.

b. Synchronisation of (SOSRA[3] elements (reducing is achieving a method of entry) and the use of effective communications through a constant information flow are vital.

c. Successful break-in and the controlled movement of forces forward through secure routes to reinforce success will allow follow-on forces to maintain the momentum of the attack.

4.27 In clearing the objective the following should be considered:

a. It is essential that the building, or part of the building, just cleared is secured and protected against infiltration or counterattack as soon as possible. Elements in depth are immediately moved forward to reinforce the assault elements and consolidate the gains. These may include assault groups, who remained uncommitted, or fire support groups.

3. SOSRA is a mnemonic for the breaching fundamentals of suppress, obscure, secure, reduce, assault.

b. The use of SOSRA principles each time forces move forward should be cyclical, although it may not be necessary to clear an entire building.

c. Continued exploitation is based on information from the initial break-in, so C2 channels should remain clear and open.

d. Lines of exploitation and flanks require security elements to prevent re-infiltration by threat forces.

e. Continuous reorganisation and consolidation must occur. Responsibilities will fall particularly upon junior ranks to maintain the attack momentum; initiative and situational awareness may be the deciding factors in the fight.

f. First-line sustainment is primarily the responsibility of the manoeuvre elements. Resupply by CSS elements is a key vulnerability; movement and entry by CSS will require protection and other support from manoeuvre elements.

g. Medical teams should be multiple, dispersed and as far forward as possible. The use of casualty collection points at platoon level and in each building may be justified.

Exploitation

4.28 Achieve Focus of Attention. The intent is to destroy the integrity of the enemy's defence and achieve freedom of action. Key enemy positions and elements are attacked and destroyed. The vital ground and lodgements required for subsequent operations are secured. Manoeuvre is concurrent and mutually supporting to maintain tempo and compromise the enemy's response. First-echelon forces complete these tasks. Second-echelon forces pass through to secure the penetration or conduct other assigned missions. The second-echelon force may be allowed to build up and then break out as in a deliberate crossing or breaching operation.

Conversely, the second echelon may launch further break-in attacks, patrols or deception activities to disrupt the defence.

4.29 **Assert Control.** The intent is to establish control over broad urban areas. Remaining centres of resistance, which do not interfere with the mission, may initially be contained and reduced. Manoeuvre becomes a systematic alternation between urban penetration and urban sweep. Penetration is used to destroy the remaining centres of resistance or to secure lodgements. A sweep is used to clear a broad area to the flanks of secured lodgements.

SECTION 4-4. FIRE SUPPORT IN URBAN ATTACK

4.30 The effective application of fire support is the key to clearing buildings with minimum delay and casualties. Properly applied, fire support can reduce the assault to a mopping-up activity. In all instances, fire support must be applied proportionately, and with discrimination and precision.

4.31 The SOSRA principle is used to focus planning for attacks of all scales. While no part of SOSRA is inherently more important than any other, without effective suppression the attack will not proceed along planned lines. This section describes the use of fire support in the attack to achieve that suppression.

4.32 **Indirect Fire Support.** When considering the use of indirect fire, the following should be noted:

a. The use of indirect fire may be able to suppress rooftops.

b. Enhanced situational awareness may be available through access to tactical UAV and other surveillance assets.

c. The use of indirect assets may be limited by the availability of a joint offensive support team or ROE considerations.

d. The use of precision-guided munitions may be an option to reduce strong points.

4.33 The all arms call for fire should be routinely practised widely down to soldier level. Joint offensive support team elements may be able to provide training. The simple procedure and examples are outlined as follows:

a. observer's identification – 'GOLF 11 THIS IS INDIA 13';

b. warning order – 'FIRE MISSION';

c. the location of the target – 'GRID 123 456';

d. the direction – 'DIRECTION 1234';

e. a description of the target – 'COMPANY OF INFANTRY, DUG IN WITH OVERHEAD PROTECTION, 200 X 200, NEUTRALISE NOW';

f. the method of engagement – 'DANGER CLOSE' (if applicable);

g. the method of control – 'AT MY COMMAND' (used if the observer wants to control the moment of firing);

h. the method of adjustment or fire for effect – 'ADJUST FIRE';

i. the trained observer will attempt to identify the target at this point and, if unable to see the target, will order 'CANNOT OBSERVE, ADJUST FIRE' to the all arms observer;

j. results – '30 PER CENT CASUALTIES, REMAINDER WITHDRAWING NORTH'; and

k. termination – 'END OF MISSION'.

4.34 **Isolation of the Enemy.** In planning a building assault, a major requirement is to isolate the enemy at every level. This is vital to ensure local superiority of force at each stage of the attack. The objective is first isolated from the support of neighbouring enemy positions by fire and smoke.

4.35 As the initial foothold is secured, other parts of the building are engaged. This isolates the enemy in the foothold area by distracting and suppressing other enemy in the building who

would otherwise provide depth to the defence. Isolating fire is often possible when neutralisation, using other means (eg, artillery) cannot be used. This fire may come from both the assault group and the fire support elements outside.

4.36 Once clearance has begun, the fire support follows. This ensures, as far as possible, the isolation of each room prior to being cleared. To maintain tight control, only one or two fire units are used to provide intimate fire support to the assault on any one level of a building. Any more than two increases the risk of fratricide. To be effective, intimate fire support from outside the building need not strike the room adjacent to the attackers. Fire applied into the room, beyond the next to be assaulted, can still achieve isolation with a reduced degree of risk. If fire into the next room is essential, tight coordination using direct communications is also essential.

4.37 Within the building, isolation may be achieved by firing weapons down corridors, and through doors and ceilings/floors. This will be depend on the ROE.

4.38 **Mutual Support.** Organisations below CT level will not normally have sufficient numbers to carry out fire support tasks from many dispersed locations, nor will such groups have a sufficiently wide base of observation and fire to provide full support when attacking from several directions. The attachment of AFV will increase firepower. A vital element in most attack plans is the coordination with adjacent forces advancing on a parallel axis.

4.39 **Fire Control Measures.** Fire control measures are essential between forces to prevent fratricide and create the greatest effect on the enemy. Fire control measures must be implemented and observed at all levels. These measures highlight the need for the following:

a. the designation of targets to individuals and offensive support assets;

b. the allocation of areas of responsibility;

c. the distribution of fire;

d. the use of no-fire and restricted fire areas (in accordance with laws of armed conflict and information actions intentions);

e. a joint terminal attack controller to coordinate combat air support; and

f. direct liaison.

4.40 Application of Fire Support. In planning the use of fire support resources, the following factors need to be considered:

a. *Targets.* The number and nature of targets must be identified. An assessment is made of what is possible against the particular type of structure with the available weapons. Effects will range from the destruction of lighter structures, part or complete neutralisation of stronger buildings, and suppression only at the windows and doors of very solid structures. The targets may include:

(1) specific points or sections of the building, particularly windows and doors;

(2) open or penetrable areas around and behind the objective where fire will isolate the enemy in the building;

(3) specific points or areas, especially to the flanks, from where enemy fire can engage the assault; and

(4) possible withdrawal routes leading away from the building to be engaged by indirect fire.

b. *Prioritisation of Fire Support.* Due to the possible locations from which the enemy may engage or interdict the assault, it may be necessary to increase the ratio of troops allocated to fire support.

c. *Obscuration.* The hazards of exposed movement are extreme, and it may not be possible to locate and suppress all enemy positions capable of interfering with an assault prior to H-hour. Smoke then becomes an

essential tool of attack. In determining the point from which smoke from grenades, generators and mortar bombs should be released, planners must take into account:

(1) *Enemy Locations.* When enemy locations can be accurately defined, smoke may be released in close proximity rather than simply on the objective. The closer the smoke to the enemy location, the larger the zone of obscuration that will be produced.

(2) *Wind.* The speed and direction of the wind determines the shape of the smoke cloud. Around buildings, it is difficult to anticipate what the wind will do because of the unpredictable influences of the buildings and streets. Marked differences in the behaviour of the wind can occur over short distances. Where possible, smoke testers should be employed.

(3) *Masking.* Smoke is a double-edged weapon and the possibility of masking friendly supporting fire is always a consideration. Thus, an alternative to smoke – for example, HE should be planned.

(4) *Duration.* The required duration of obscuration must be calculated and ammunition set aside accordingly. Allowance for contingencies, such as the deployment of reserves and the evacuation of casualties, must be included in the total calculations.

(5) *Artillery-fired Smoke.* Where smoke is to be fired using artillery, the forward observer will perform the necessary technical calculations and issue the orders to the guns according to the supported arm commander's requirements.

d. *Protection and Security.* In the close urban environment, there is a constant risk of surprise counterattack and ambush, particularly during or just following the attack

when troops are loosely deployed/isolated in complex terrain.

4.41 Approaches to a building are usually better covered from the outside. For this reason, those in fire support positions may not necessarily move into a building that has just been cleared. They will often move forward to new positions outside. From here, they may be better able to secure the building against counterattack and apply fire onto the next objective. This tactic also reduces the vulnerability of what would be a greater concentration of troops to retaliatory fire from enemy indirect fire weapons.

4.42 A recently cleared building is most vulnerable from those approaches, which are blind to fire support groups. These approaches may not be obvious until the building is cleared. This applies especially where the building adjoins or is close to other buildings. On reorganisation, assault groups must cover these approaches as a priority. It is a sound practice to withdraw back through one room from where the enemy thinks the assault reached and cover towards the far wall through interior doorways. This deception measure reduces the risk from enemy retaliatory fire through walls, ceilings or floors.

SECTION 4-5. ASSAULT AND SUPPORT TASKS

4.43 This section outlines organisations, tasks and the requirement for support during the assault phase of an UO clearance, including the integration of other arms in the combined arms team.

Individual Tasks

4.44 Individual members of teams may be given tasks with the following specific meanings:

a. *Breacher.* A breacher carries tools, explosives and equipment to create access to and within a building.

b. *Marker.* A marker displays a panel, light or other marking device to show the furthest point of progress at each consolidation.

c. *Linkman.* A linkman remains at a specified point to provide (voice) communications to the rear.

d. *Flank Protection (Left or Right).* Flank protection teams may be required on both flanks of the axis of attack. These may consist of small teams sited at intervals. By day, snipers and sustained fire machine guns are able to dominate larger gaps. At night, security teams may need to be closely spaced.

e. *Intimate Fire Support Party.* The intimate fire support party fires into the building during clearing, under the control of the FSP commander.

f. *Carrier.* Carriers carry ammunition and bulky equipment such as ladders forward, and casualties to the rear. They are normally grouped into teams of two or three soldiers.

Team Tasks

4.45 Infantry Armoured Fighting Vehicle Teams. Infantry AFV teams are required to protect AFV and identify targets for tanks. The teams work in cooperation with AFV crews. Prior to rapid movement, they assist in selecting routes, hides and firing positions.

4.46 Smoke Teams. Smoke teams are required when smoke devices, particularly generators, must be carried and placed away from the main route of the attack.

4.47 Demolition Teams. Demolition teams carry and employ demolitions for the breaching of obstacles and the destruction of strong posts. Trained specialists are included. The infantry normally provides carrying manpower.

4.48 Seizure or Disruption Groupings. Parties of below section size are occasionally required to act as seizure or disruption groupings. These infiltrate out from the main axis of the attack. To compromise the enemy defence, small seizure groupings

occupy undefended positions behind or to the flanks of the enemy. Disruption groupings interdict enemy redeployment and carry out deception tasks.

4.49 Sentries, Linkmen and Runners. Sentries, linkmen or runners are drawn from combat units at large. Sentries may often be required along the lines of communication. A shortage of numbers may compel individual siting in view of the other troops. During the advance, linkmen may be required to maintain effective communications back from a sub-unit. At this time radio or line may be unavailable or ineffective, particularly during intense combat.

4.50 Carrier Parties. Carrier parties will constantly be required to move ammunition forward and remove casualties to the rear. For such a task, it may be necessary to detail soldiers from the start of an activity.

4.51 Protection Parties. Soldiers may be required to act as escorts and porters for ammunition. Supported weapons may include flamethrowers, mortars, recoilless rifles or heavy machine guns. Other arms may require assistance with specialised equipment such as direct fire artillery pieces or engineer items.

CHAPTER 5

DEFENSIVE TACTICS, TECHNIQUES AND PROCEDURES

Fighting in Stalingrad … represented a new form of warfare, concentrated in the ruins of civilian life … German infantrymen loathed house to house fighting. They found such close quarter combat, which broke conventional military boundaries and dimensions, psychologically disorientating … It possessed a savage intimacy which appalled their generals.[1]

SECTION 5-1. INTRODUCTION

5.1 The basic considerations for defence remain particularly relevant when conducting operations in urban environments. The urban environment allows the defender considerable advantages, such as easily fabricated cover and concealment, and increased lethality of defensive fire.

5.2 This chapter provides guidance on techniques and drills required for the urban defence at or below CT level. It covers mainly the procedures for the defence of an urban locality. This may include one or more buildings and surrounding areas. The techniques in this chapter have broad utility across a comprehensive range of activities. The selection, siting and preparation of the urban defensive positions are described, together with the procedures for conduct of the defence, the delay and withdrawal. This chapter outlines the preparation of defensive positions, fighting from defensive positions, and delay and withdrawal.

1. Beevor, A., *Stalingrad – The Fateful siege: 1942–1943,* 1999, pp. 148–149.

Considerations

5.3 Considerations for defence in urban terrain include:

a. *Terrain Analysis.* Defensive planning in urban areas requires a thorough understanding of the terrain, the terrain impact on weapon systems and the combined effect on operations (see Chapter 1). Although much analysis will be conducted during the MAP, UO require junior leaders to develop an 'eye' for terrain.

b. *Weapon Effects.* Planners need to be cognisant of the reduced range of engagements, the increased cover and concealment of targets (and, conversely, the penetration effects of weapons on urban structures), and particularly the utility of explosive and flame weapons.

c. *Engagement Area Development.* The EA development process is used down to platoon level rather than CT level. Particular consideration should be given to the implications of engagements at closer ranges and the fire control measures for engaging enemy individual vehicles and squad elements.

d. *Protection.* Protection should be considered in conjunction with EA development rather than subsequently. The urban landscape will provide imaginative scope to achieve protection.

e. *Depth.* Depth in urban defensive tactics may be provided by utilising weapon effects or layering friendly forces. Tactical obstacles may be integrated down to platoon level and should contribute to a defensive depth, though protective obstacles are sited much closer to defensive positions and tied directly to other protection measures.

f. *Reserves.* Reserves should utilise the defensive advantages of covered and protected routes. Used properly, these may provide surprise at critical moments.

g. *Deception.* The urban environment provides many opportunities to employ deception, even down to squad and section level (see Section 5-2).

SECTION 5-2. PREPARATION OF DEFENSIVE POSITIONS

5.4 Prepared defensive positions, appropriate to the environment, provide defending FE an advantage and reduce casualties. Considerations for preparing defensive positions in an urban environment include:

a. siting;

b. the types of urban positions;

c. the initial preparation of fighting positions;

d. the further preparation of the defences;

e. materials for improvement of fighting positions;

f. the development of routes;

g. interior construction and barriers;

h. exterior preparations;

i. the stages of occupation and development;

j. occupation drills; and

k. the development of the position(s).

Siting

5.5 The siting of fighting positions is designed to channel the enemy into the natural fire lanes afforded by building characteristics. To achieve this, the principles of EA development are followed. The individual fighting positions are sited in accordance with the considerations at section level – key fighting positions are determined first. Key weapons include those that cover EA and those providing the framework of fire lanes in main defensive positions. Each weapon will normally be allocated a primary and alternative firing position, covering the same arc of fire. The remaining weapons are sited to strengthen the all-round defence and to cover remaining enemy approaches. Such weapons will be allocated a primary and alternative firing position with one or more possible

secondary positions and arcs. Temporary firing positions may be sited to allow the reserve and other troops to be redeployed to concentrate firepower.

Types of Urban Positions

5.6 Individual fighting positions are classified as interior or exterior. Fighting positions can be further classified to describe the actual firing position or arc of fire. However, a fighting position may have more than one firing position. As an example, within the internal corner of a building, a fighting position may have both an arc of fire out through the wall and a secondary arc covering an interior approach. Positions may face inwards so that friendly positions are sited in the centre of arcs of fire, with supporting fire provided on either side.

5.7 **Interior Positions.** Interior firing positions give additional concealment and protection from weapon effects and close assault. However, coverage is very restricted, as the position is surrounded by dead spaces. Interior firing positions include:

a. *Corner 'L'.* A corner 'L' firing position uses loopholes cut into the corner of a building to achieve a wide arc of fire out from that corner and to avoid having a corner dead space. The hole is usually L-shaped. Corner positions are difficult to conceal and vulnerable to fire from a wide arc.

b. *Interior Wall.* An interior wall firing position (see Figure 5–1) uses an interior doorway or loophole to provide additional protection when firing takes place through one of the apertures.

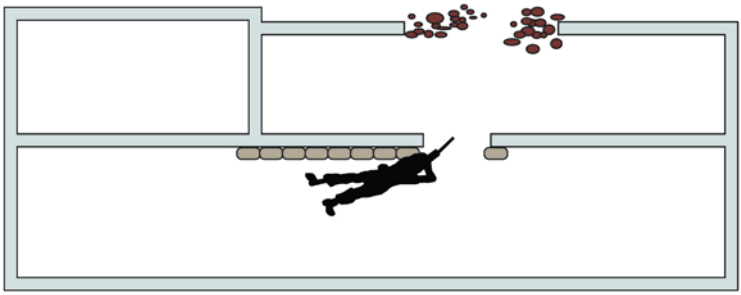


Figure 5–1: Firing Position – Interior Wall

c. *Corner Twoway.* A corner two-way firing position (see Figure 5–2) is sited in the inside corner of a building where there are loopholes, doors or windows near the corner on either wall. An LOS exists through the corner. These positions can be used for the firing of recoilless weapons from the inside of buildings. A single soldier is able to observe easily in two directions. These positions are highly visible and may silhouette the firer.

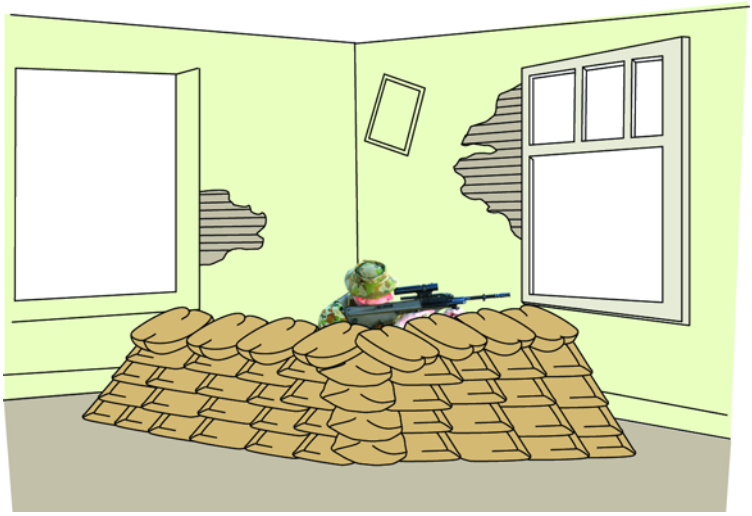


Figure 5–2: Firing Position – Corner Twoway

d. *Interior Bunker.* An interior bunker is built inside the building to provide protection while firing takes place out through one or more of the apertures. From such a position, close assaulting enemy may be engaged from behind solid cover. Such positions give considerable protection against HE and flame weapons that may be fired through main apertures.

e. *Overhang Defilade.* An overhang defilade firing position uses overhanging solid cover over a window or other aperture. This will achieve a vertical defilade effect for an interior position set back from the aperture. A high interior wall loophole may face downwards and out through a lower window. An area is covered immediately in front of the building, but is defilade from further away.

f. *Interior Roof.* Interior roof positions are located within sloped roofs. Small areas of tile or other roofing material are removed to allow observation and fire. Because of

very limited arcs and vulnerability, these positions are normally used as OP or sniper positions.

5.8 Positions that allow movement by firers are likely to cover much wider arcs. Similarly, if placed adjacent to each other, two positions will give a wider total arc. If the position faces through a series of windows, dead spaces will be reduced or eliminated.

5.9 Individual soldiers should not be deployed alone. In rooms on corners, one soldier may observe in two directions at 90° to the other. The occupation of diagonally opposite corner rooms may provide the most efficient form of all-round defence from interior positions. In covering wide arcs, there are dangers from dead spaces and from soldiers being over exposed. Corner room positions are not necessarily two-way. A corner 'L' will not provide a 180° arc.

5.10 **Exterior Positions.** Exterior positions enable much larger arcs of fire and more effective coverage of streets and other approaches. Such positions are relatively exposed and vulnerable to elevated engagement and close assault. The following exterior firing positions may be identified:

a. *Building Defilade.* Building defilade fire positions are sited outside buildings and located in trenches or similar cover. These positions receive defilade protection from any nearby buildings that stand in the direction of an enemy approach or the likely direction of fire. Building defilade positions are extensively used in the siting of recoilless anti-armour weapons.

b. *Corner Protective.* Corner protective fire positions are sited on the corners of buildings, with primary arcs that cover the outside walls of the building with enfilade fire. These provide fire lanes around defilade positions of at least one building. A minimum number of troops needs to be deployed. To provide protection and concealment from the exposed outward direction, corner positions are often constructed with rubble or earth defilading banks placed in the direction of the main enemy threat.

c. *Exterior Roof.* Exterior roof positions may provide maximum elevation advantage, wide fields of fire and cover of the roof approaches. These positions are extremely vulnerable, and are normally occupied only by sentries or soldiers deployed in hidden listening posts. Otherwise, the positions may be maintained for short engagements only. Recoilless weapons may be used to advantage from roof positions.

d. *Under Floor.* Under-floor positions are dug into the ground beneath buildings that are constructed on piers or stilts. The structure serves to provide overhead protection (OHP) and concealment. Some additional protection may be obtained from masonry piers.

e. *Wall Enfilading.* Wall enfilading positions are built forward or to the flanks of walls to enfilade along their length.

5.11 Inwards Facing. To achieve mutual support, positions may be set up to face inwards towards one another. These usually allow better cover of approaches with fewer dead spaces for a given number of soldiers. More effective use may be made of narrower arcs. Internal positions may be sited further back within rooms, with the usual advantages of depth and mutual support.

Initial Preparation of Fighting Positions

5.12 Fighting positions are selected and prepared to cover allocated arcs. Individual soldiers will often have to move their position to properly cover the range of the arcs. Initial preparation is undertaken as follows:

a. *Windows and Doors.* Windows are opened sufficiently to allow coverage of the arc. Glass may be removed to reduce the splinter hazard. If taken from one window, the glass must be removed from other windows and those in adjacent buildings. Any available curtains are adjusted to give maximum concealment while allowing the arcs to be covered. Doors are opened sufficiently to allow the arc to be covered and then fixed in that position.

Alternatively, a small firing port may be cut in the door. Where possible, positions are taken up in internal doorways to enable additional protection from internal walls. Furniture is used to provide additional protection, height and supported fire positions. Tables may be placed to the side of upstairs windows to allow firing down and out from a defilade standing position. At ground level, tables and chairs may be used in the preparation of a supported sitting position. Positions will most frequently be sited to the left of windows. This allows soldiers to fire safely from the right shoulder, as illustrated in Figure 5–3.

Figure 5–3: Firing Position – Window

b. *Roof Positions.* Internal roof positions (see Figure 5–4) are prepared under sloped roofs. Internal waterproofing material is stripped away. To permit observation, the tiles or sheets are levered up at the joins. To allow use of the smallest possible firing aperture, panels may have

to be cut. Tiles may be lifted or removed. The same process is repeated elsewhere to conceal the actual position. External roof positions have access/exit points prepared as a priority and are reinforced with sandbags. To reduce silhouette, these positions are sited next to roof structures such as chimneys. If sited on a tiled roof, ridge tiles are removed and a translucent material placed across the gap to allow observation through the ridge.

Figure 5–4: Firing Position – Roof

c. *Loopholes.* Loopholes (see Figure 5–5) are prepared in walls where there are no alternative apertures. Several factors affect the construction of loopholes:

(1) *Concealment.* In a bare wall, the obvious loopholes will easily be located and neutralised by the enemy. Loopholes should be sited in the least obvious positions. At ground level, the irregular shapes of foliage and rubble may disguise loopholes. At higher levels, efforts should be made to locate loopholes at changes in surface appearance or in shadow. These may be sited under eaves, placed adjacent to fittings such as drainpipes, merged with other patterns of objects

or disguised by foliage. Loopholes may be created by the removal of fittings such as drainpipes, venting bricks or air conditioners. Loopholes are made as small as possible.

(2) *Shape and Size.* Loopholes are made in a cone shape to allow a wide angle of fire and the engagement of high and low targets. At the same time, the external aperture is kept as small as possible. The size of a loophole is governed by the weapon to be used and the arc to be covered. The minimum size of the outside hole is dictated mainly by the vertical height distance between the barrel and the LOS. In addition, a small increase in size is allowed to ensure muzzle clearance when the weapon is fired from well back inside the wall. To engage an arc any wider than about 80°, a large increase in loophole width is required for a small increase in arc of fire. Arcs wider than 110° are usually impracticable except on corners. Corner loopholes allow the corner dead space to be covered. If extended back along the wall to produce an L-shaped cut, these allow a wide arc of fire to be achieved. Corner loopholes cannot be cut in heavy masonry buildings where the corner is a structural support. To do so requires special reinforcement of the hole.

(3) *Materials and Cutting.* The wall materials will govern how easily loopholes can be made. The initial aperture may be made by punching, drilling or chipping. Masonry walls can often be opened by levering out the bricks or stones with hand tools along a mortar or fracture.

(4) *Lines.* Concrete walls are difficult to breach and require power tools or explosives to allow cutting to take place with speed. Skill is required in the use of explosives for cutting loopholes. Excessively large apertures should be avoided.

However, explosives offer speed and enable the creation of loopholes with the appearance of weapon impact points. This is achieved by a well-tamped small charge placed on the outside wall, supported by tamping on the inside of the wall around the intended internal aperture but leaving unsupported the area to be removed. Except on ferro-concrete walls, explosives cause difficulties in the creation of a cone-shaped hole. SAF can be used to create loopholes. Fire may be applied from either inside or outside the wall.

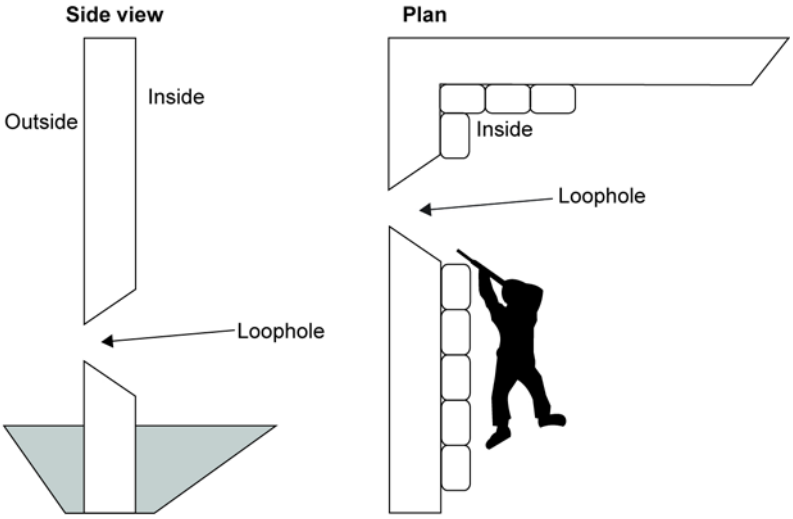


Figure 5–5: Firing Position – Loophole

d. *Loopholes – Internal Walls.* Loopholes are prepared not only on outside walls but also on internal walls. These are constructed to enable troops to cover out through other loopholes, windows or doors and to cover internal approaches. Loopholes may be cut in walls, floors and ceilings. Floor loopholes are used to attack enemy in the

level below and to achieve overhang defilade by firing out of the building through windows on lower floors.

e. *Primary and Secondary Positions.* Because of the angled firing position afforded by loopholes, primary and secondary positions can be prepared using the same loophole as illustrated in Figure 5–6. This procedure allows the soldier to shift fire onto a sector not previously covered.

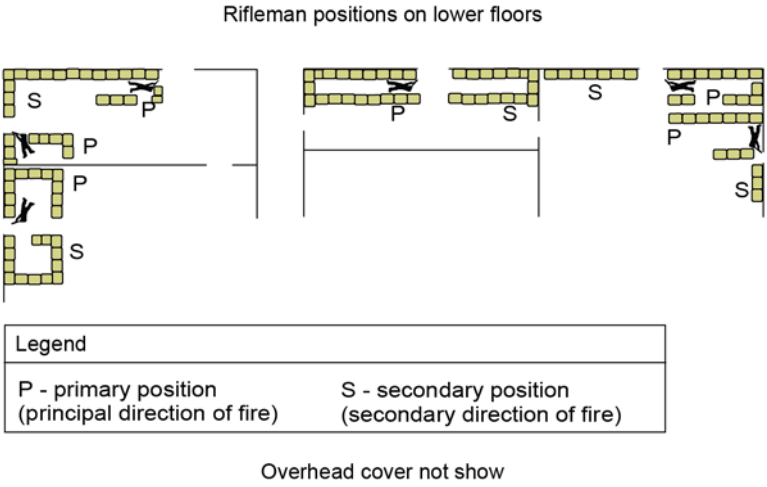


Figure 5–6: Firing Position – Loophole Primary and Secondary

f. *Under-floor Positions.* Under-floor positions (see Figure 5–7) are prepared by digging fire trenches in the soil beneath a building, with arcs of fire set between supporting piers. Parts of piers may be cut or loopholed to provide suitable arcs.

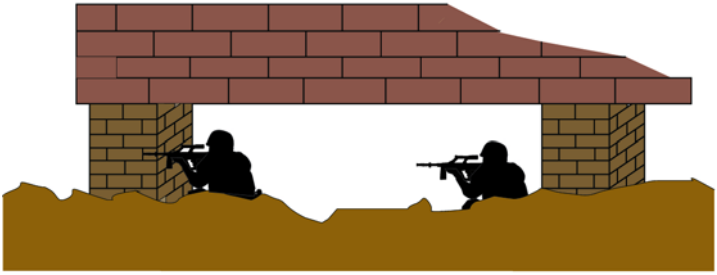


Figure 5–7: Firing Position – Under Floor

g. *Exterior Position.* Exterior positions are dug as fire trenches in the normal manner. These may be more rapidly prepared by the occupation of service access chambers for sewers, telephones or electricity cables. External positions are most useful in the deployment of recoilless weapons. As a priority, communication trenches must be constructed into the nearest defended building.

h. *Fixed Lines.* The enemy may be engaged at night or under obscuration. To achieve this, 'fixed lines' of fire need to be specified for every weapon. Without a true fixed-line capacity, a weapon may be rested on a specified point between two sandbags or similar guides. The weapon is aimed in line with vertical and horizontal marks painted or chalked on the inside of the wall through which the firing takes place. Alternatively, the weapon can be fixed more precisely with aiming discs supported on mesh or gauze in the firing aperture. Flyscreen wire may be used. The technique allows all weapons to be fired blind at selected approaches on a given FPF signal. Several such fixed-line targets can be specified, with different numbered or lettered aiming discs.

Further Preparation of the Defences

5.13 The commander will identify and prioritise development of key positions. The sequence and extent of preparation will depend on the following factors:

a. the proximity of the enemy;

b. the expected time of enemy arrival;

c. the exposure of the position to observation;

d. the detailed nature of the enemy threat, including supporting elements;

e. the availability of machinery, explosives and engineer assistance;

f. the number of positions to be prepared and other tasks to be completed; and

g. the actual number of soldiers available.

5.14 Priorities will be laid down carefully to reflect the factors outlined in paragraph 5.13. Upon this basis, a program of work is planned. This should ensure that all practical aspects of preparation are taken into account. As an example, obstacles around buildings should not normally be completed before the major internal protective construction takes place. This would hinder the movement of materials designated for the construction.

Materials for Improvement of Fighting Positions

5.15 Fighting positions may be improved with the use of furniture, fittings and defence stores, as illustrated in Figure 5–8. Maximum protection should be achieved from all directions; this can be accomplished by reinforcing firing apertures and building protective bunkers or enclosures. Expedient materials available for these purposes may include:

a. *Furniture.* Furniture can be used to provide some degree of protection against blast and fragmentation. It may also provide elevated firing positions and support for other protective materials. Tables, desks and beds can

support the OHP of sandbags and can be used as roofs that protect against fragments, bullets and collapsing ceilings. Barrier material such as soil or rubble can be placed in chests of drawers and cupboards laid on their sides. These should be filled in position, being too heavy to move once full. Mattresses and soft furnishings may be piled against walls to reduce the reflected blast effects of recoilless weapons and HE rounds. Such material must be dampened to reduce the fire hazard. Bedspring mesh may be used to shield firing apertures from the entry of grenades.

b. *Fittings.* Doors and shelving may be used to support OHP and to construct protective enclosures. Carpets can be hung in front of walls, over openings and around positions. These provide 'blast curtains' and protection against immediate flame effects. The material must be kept damp to reduce the fire hazard. There is a hazard with the ignition of synthetic products that create a toxic smoke. Flyscreen netting and other mesh fittings may be used to block firing apertures from the impact of grenades.

c. *Building Materials.* Materials are broken from within the building or from nearby for the construction of barriers against fire and blast. Blocks and bricks can be loosely assembled into thick walls. Care needs to be taken to ensure that the join lines are alternated so as not to form lines of penetration. These barriers can be held together by furniture or corrugated iron sheets and fastened with wire or rope. To afford fire protection, sand or soil is laid on wooden floors to a minimum depth of a few centimetres. Scaffolding and timber from buildings is used to reinforce ceilings and bunkers and to protect against ceiling collapse. Ceilings require extra support if loads of protective soil are placed on floors and constructions are placed on upper floors. Vertical beams are wedged and fixed in place directly under horizontal load-bearing members.

d. *Sandbags.* Sandbags are used in large quantities to improve the protection of buildings. Walls are reinforced against penetration and the effects of interior spalling. Sandbag walls are built as barriers around firing positions and used in the construction of bunkers and blast walls. In buildings with wooden floors, sandbags are laid to block enemy fire from above or below; this requires the shoring of ceilings. Sandbags may be filled with hard materials such as gravel or shingles, but these sandbags should always be placed in outside layers. Soil- or sand-filled sandbags should be placed nearest the deployed personnel to reduce fragmentation from projectile impacts. Care should be taken to beat sandbags down firmly and allow for further settlement of the contents over a 24-hour period. In preparing an urban defensive position, the large quantity of sandbags may require special arrangements such as ‘one-man’ sandbag fillers, wheelbarrows and plant.

Figure 5–8: Improvement of Firing Positions

Development of Routes

5.16 Within an urban defensive position, the routes are developed to allow rapid movement between fighting positions and shelters. Escape provisions are made in the event of partial building collapse. In addition, there needs to be freedom to manoeuvre so that enemy penetrations may be countered.

5.17 **Interior Routes.** To allow free movement, interior routes are opened by cutting mouse-holes through walls, ceilings and floors. Mouse-holes (see Figure 5–9) are sited to be as inconspicuous as possible, with all signs of preparation cleared away. Holes in walls are concealed and blocked by furniture. Ceiling holes are made in darker rooms and constructed through cupboards, creating difficulties for use by the enemy. To allow access between floors, ropes or rope ladders are tied

off at floor mouse-holes. Soldiers are able to fight from an upper level, having withdrawn the means of access. In light buildings, interior routes may be provided by communication trenches dug into the soil beneath.

Figure 5–9: Mouse-hole

5.18 **Exterior Routes.** In the conduct of a protracted defensive battle, routes must be provided to exterior positions and neighbouring defended buildings. This allows full scope for offensive action and successful withdrawal in contact. Communication routes should provide cover and concealment. Otherwise, low cover or crawl trenches should be provided. Where possible, trenches should enter buildings below ground level. The means should be provided for the rapid closing of routes to attackers.

Interior Construction and Barriers

5.19 Positions are developed to provide maximum protection against weapons fired from outside the building and against any enemy who succeeds in penetrating the building. Barriers

are constructed to prevent enemy access. Where this occurs, barriers need to contain any counterattack. Low walls may be built to protect access and redeployment routes.

5.20 Fighting Positions. Fighting positions are developed by the construction of protective walls around firing positions. As a minimum, low coffin-shaped walls are built to provide a prone soldier with some protection against penetrating direct fire and the effects of grenades. As time and resources allow, positions are developed by the construction of barriers against the most likely directions of fire. These are developed into individual bunkers with all-round protection. Fields of fire cover both outwards from the building and inwards to the interior. Provided arcs can be covered, fighting positions are sited inside rooms away from walls. In this way, protection is gained from the air gap between the wall and the individual bunker. This will improve concealment and reduce the effects of explosive weapons striking the wall of the building or entering the aperture. Protected positions should allow the firer to move sidewards to cover a greater arc. Measures used around fighting positions may include:

a. *Overhead Protection and Reinforcement.* OHP is needed against collapse, small arcs of fire and fragmentation from above. This protection is developed through sandbags or similar barrier material placed on furniture or other building material. Immediately above firing positions, ceilings are reinforced with upright beams. As a minimum, the overhead cover is strengthened, thus protecting against ceiling collapse. For use as struts, scaffolding tubes or 30 x 2 cm (12 x 1 inch) timber is cut to length. The supports are placed directly below a point load, or for general support, in a line halfway between the longest walls of the room. Planks or flat timber are used as load spreaders at each end of the struts. Struts are secured in place with wedges, as shown in Figure 5–10. When shoring a timber floor, struts are placed immediately below the joists, with load spreaders running at right angles to the joists. For maximum benefit, shoring is continued

downwards through the building to the lowest floor. Further details on reinforcing are provided in *LWP-G 3-6-4, Physical Force Protection*.

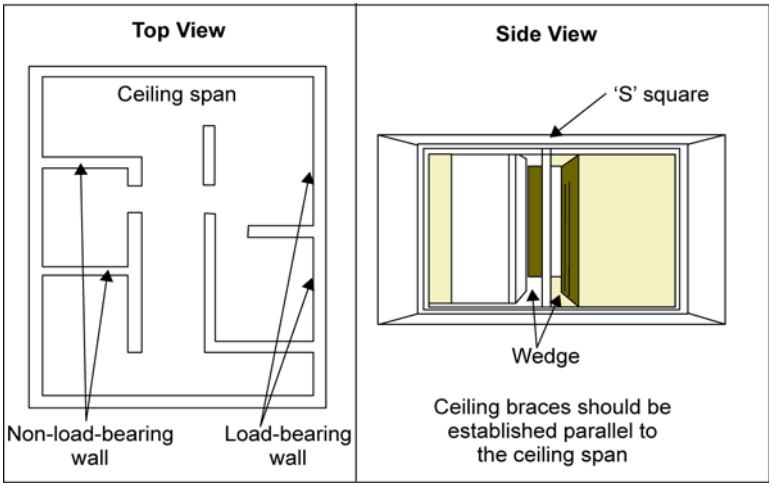


Figure 5–10: Overhead Reinforcement

b. *Blocking of Firing Apertures.* If used as firing apertures, loopholes and windows need to be blocked with wire mesh or similar material to prevent the entry of thrown grenades. On upper floors, the lower side may be left loose to allow for the dropping out of grenades. Net curtains, scrim, hessian or other translucent material should be used to block vision inwards and to avoid silhouettes, but to permit viewing out. If not in use, loopholes should be blocked with sandbags or masonry. If located above floor level, these may be supported on furniture, thus preventing the enemy from viewing the interior or inserting charges.

c. *Reinforcement and Damping of Firing Apertures.* The walls surrounding firing apertures should be reinforced with sandbags or masonry to reduce the effects of enemy fire at the apertures. Damp cloths should be

placed in the firing apertures to reduce the dust raised by muzzle blast.

d. *Floorboard Removal and Grenade Sumps.* Floors are breached below windows, in doorways and in other parts of the buildings. Undertaken in small areas, this provides sumps into which enemy grenades might fall to explode harmlessly. Assaulting enemy may be delayed by being denied a footing. A wider removal of floorboards allows fighting positions to cover approaches above or below. A grenade sump is dug outside any firing apertures at ground level (see Figure 5–11) or built with small sandbag walls where floors are solid. Floorboard removal is normally combined with the laying down of internal wiring.

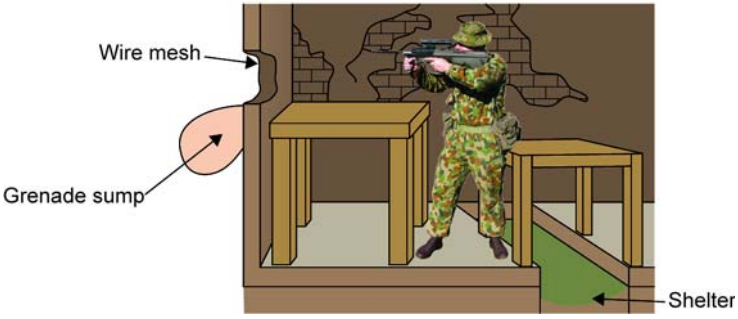


Figure 5–11: Floorboard Removal and Grenade Sump

e. *Doors and Windows.* Doors and windows may be blocked to access or barricaded to provide protection against fire. Doors may be locked and bolted, allowing only friendly use. Doors may be further blocked with heavy furniture or sandbag walls. It is often desirable to allow the door to be opened just enough to permit one person to pass slowly. A solid barrier may be constructed at that point to lead into a chicane of blast walls fitted with loopholes. This permits access by friendly troops, but protects against enemy fire and rapid assault. Windows

and doors may be protected and blocked off by sandbag walls or masonry, as depicted in Figure 5–12. These are supported by sheeting or planks and secured, on either side of the wall, by the windlassing of steel pickets or wood–beams.

Figure 5–12: Sandbag Wall Protection

f. *Sheeting to Block Windows.* Strips of wood, steel pipes, pallets and pickets may provide further barriers to entry. These may be lashed or nailed in place either inside or outside. Less obvious obstacles to entry are made on the insides of windows. Wire or pickets may be fastened in a pattern that conforms to the window frame. Wire is secured to window frames or fastened to walls with masonry nails.

g. *Interior Spaces.* For friendly movement, interior spaces such as rooms, corridors and hallways may not be required. To contain enemy penetration, such spaces may be readily obstructed with wire obstacles. Furniture can be upturned, scattered and nailed to the floor to provide a matrix from which single strands of barbed wire

may be run. A thicker obstacle can be made with coils of wire supported on a framework of furniture. Wire obstacles have the advantage of providing limited cover or concealment for an entering enemy. More solid barriers can be erected in corridors with timber and furniture attached on a diagonal cross-beam support. In many buildings, floorboards can be removed widely and wire fixed to joists to create an effective and exposed obstacle, as illustrated in Figure 5–13.

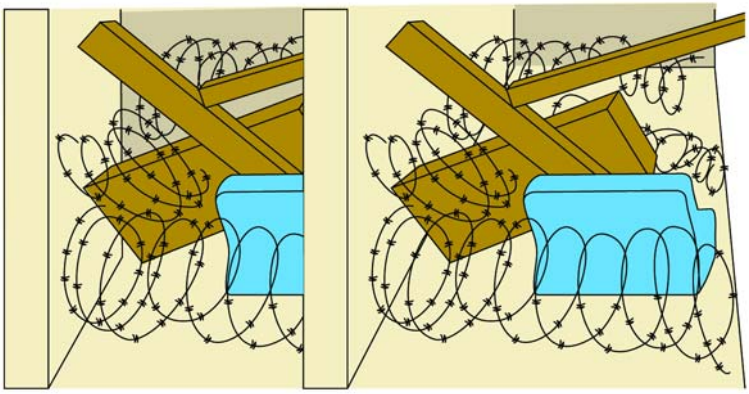


Figure 5–13: Interior Space Obstruction

h. *Staircases.* As with other interior spaces, staircases may be denied by total demolition or by blocking with furniture and wire obstacles. To permit friendly access, but prevent rapid enemy assault, stairs can be prepared by covering the steps with boards that have nails knocked through to project upwards. A narrow gap can be left on one side to allow defenders to use the stairs. The use of wire is a quicker method of obstruction. In concrete stairwells, walls may be built to provide both obstruction and shelter.

5.21 Mines. Generally, only command-detonated mines will be used within a defended position. Where defended buildings adjoin

others or there is the possibility of enemy approaches, target-operated booby traps may be laid inside the buildings. These will be laid on the enemy side of the interior obstacles. Command-detonated Claymore mines are sited to destroy enemy assaults. These are concealed within rooms and hallways and sited where the EA can be viewed through a loophole. The mines are normally placed well clear of walls. Rooms with venting will reduce the chances of the interior being demolished unintentionally.

5.22 Shelters and Other Protection. Group shelters may be constructed for protection against heavy bombardment. These are provided in addition to the OHP prepared for each individual fighting position. Such shelters may serve as an alternative when time is short and protection is a priority. Other protective measures may also be carried out, which may include digging trenches and building internal blast walls, reinforced rooms and escape routes. The following factors are taken into account in the selection of shelters:

a. *Wall and Ceiling Strength.* The strongest possible walls and ceilings are required for the shelter area. These structured walls may be found in corridors and stairwells where other walls are non-structural and provide limited protection. The strongest part of the building frame should be found to support additional protection. Walls and ceilings are strengthened and reinforced with sandbags and other barrier material.

b. *Multiple Barriers.* The location of the shelter should provide the greatest possible number of barriers in the direction of the likely attack, both vertically and horizontally. This gives the best protection against heavy and delay-fuzed munitions.

c. *Size.* The shelter should be as small as possible, consistent with the capacity to accommodate soldiers and provide adequate fresh air under attack. This allows the most efficient possible use of resources for reinforcement.

d. *Access and Exits.* The location must provide reasonable access to and from fighting positions, with at least one possible emergency exit.

e. *Defensibility.* The shelter must be defendable if an enemy succeeds in closing with the position during bombardment. In practical terms, it must be possible to observe or bring fire to bear onto the approach to the shelter. A command-detonated mine should be sited to cover the access area and fired from within the shelter.

5.23 Freestanding Protective Walls. Protective walls may be built to reduce blast effects and fragmentation inside a building and to isolate enemy penetration. These are constructed of masonry or sandbags and usually built within hallways, corridors and staircases. Such walls will often be constructed in a zigzag or chicane, with firing ports to allow engagement of the enemy beyond. Carpets and heavy material are hung in spaces as blast and smoke curtains to reduce smoke and block flying material. Walls may be built around interior positions housing recoilless weapons to isolate firers from weapon blast.

5.24 Reinforcement. The structure of the building is further reinforced by an increase in wall protection and supporting capability and the provision of additional ceiling support. Sandbags and masonry are the primary materials and are concentrated in the direction of the enemy threat, particularly from where heavy direct fire rounds might impact. Walls, shelters and internal firing positions are reinforced.

5.25 Fire Protection. Fire is a significant hazard in defended buildings. For this reason, the flammability of structures must be reduced as far as possible. Flammable furnishings, furniture and fittings must be stripped out, especially synthetic furnishings, foams and fabrics. These burn readily, releasing toxic smoke. Efforts must be made to dampen down the remaining furnishings used for camouflage or blast protection. Unless made of fireproof material, floors need to be covered in a layer of sand or soil. All sinks and baths must be filled with water before outside supplies are cut off. The water may be used for drinking and firefighting. Garden or fire hoses are

connected to building header tanks. Water from the hot water tanks is used where there is no cold water header tank. Within the defended building, fires may be fought with buckets filled with sand or fine soil, dampened cloth or fire extinguishers.

5.26 Shelter Trenches. If the building does not provide substantial shelter, trenches may be dug behind or beneath the structure. Located beneath the building, trenches gain OHP but may be blocked by falling rubble. These are connected into the building to double as external fighting positions. There must be provision for the blocking of access into the building through these trenches.

Exterior Preparations

5.27 Outside defended buildings, improvements must be made to the fields of fire and the preparations for concealed defence. Obstacles are created to delay, expose and give warning of an enemy approach. Clearance of the fields of fire, and the external construction of obstacles, must be balanced against the need to keep the location of the defence concealed. Much will depend upon the nature of the enemy threat. If the enemy has an air reconnaissance capability, the defensive layout must not be detectable from the arrangement of obstacles and the cleared fields of fire. An enemy may have armoured vehicles or other heavy direct fire capabilities. Obstacles located immediately around positions are likely to invite enemy fire and subsequent destruction. An enemy may be prevented from defining the defence by secondary or false positions, cleared fields of fire and obstacles in other locations. For these reasons, there must be a clear policy on exterior preparations. Figure 5–14 is a schematic layout of defensive position showing the possible employment of mines and wire.

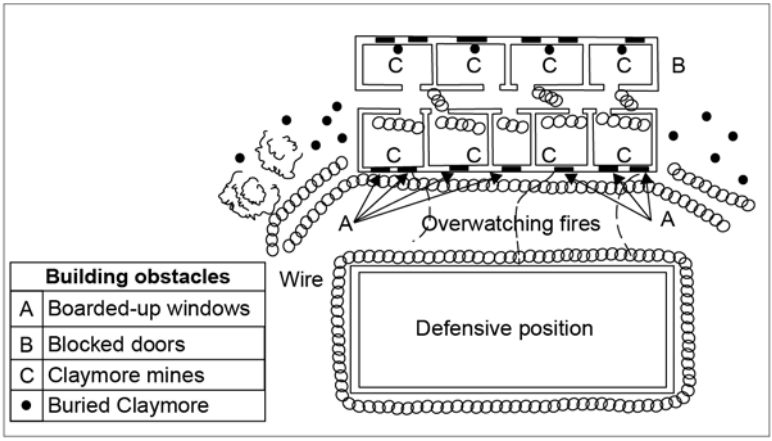


Figure 5–14: Schematic of Defensive Position

5.28 Clearance of Fields of Fire. The clearance of fields of fire may be limited for the reasons just stated. Where structures can be completely razed, removal may not be obvious. The removal of a complete wall section may leave vertical edges. These are often less obvious than prepared loopholes. In key areas, the enemy may be denied a covered approach through the demolition of buildings by explosives or plant. Fences, foliage and small structures may be easily removed. The lower parts of fences and foliage may be removed to allow fields of fire while retaining some concealment value.

5.29 Internal Clearance. Fields of fire may often be cleared within buildings nearby to deny their use to the enemy. This can be achieved without exposing the location of defences or removing the defilade protection. Exterior walls are removed from the faces of buildings opposite the defended position. The interior is stripped as far as possible. Obstacles may be sited in the interior and command-detonated mines placed in the front of dead spaces, preventing the enemy from using the building as a covered approach or an FUP. At the same time, the position still remains available for counter-moves by the

defenders, particularly for AFV. In continuous buildings, entire interiors may be stripped, including floors. Obstacles are placed inside to create concealed EA covered by positions built into internal walls. If the need for concealment dictates that the complete clearance of walls is not possible, small sections or lower positions may be removed to produce gaps that will expose enemy movement.

5.30 **Wire Obstacles.** Wire obstacles must be laid selectively to avoid compromising the defensive layout. These are laid in open areas and streets to delay an enemy and to deny movement by rapid rushes between cover. Such obstacles may be used along the centres of streets to the flanks to deny outflanking moves. Single-strand wire may be strung between buildings. Posts may be placed into service access holes and pickets driven into bitumen or where kerbstones have been removed. A comparatively simple web of wire will prevent rapid enemy movement across streets. Unless more concealed locations are available, wire coils are laid to form obstacles in the centres of streets, where attempts to breach or cross will be most exposed.

5.31 Where concealment considerations permit, Dannert barriers or entanglements are constructed around defended buildings. Low wire entanglements are more easily concealed and provide less definition of the defended positions. These obstacles prevent the enemy from assaulting close enough to place charges by hand or to reach the spaces around the building that cannot be seen from inside. Wire obstacles on roofs and climbable structures may be laid to prevent enemy assault from above. Where necessary, these are reinforced with poles and other helicopter obstacles. Wire can be concealed within buildings, in narrow gaps and gullies, behind walls and fences, and among foliage. However, these locations are difficult to cover by fire. If possible, wire is laid on the exposed side of the cover. Wiring is often combined with mining to discourage and delay enemy attempts to cross the barrier, to give warning of enemy activity in dead ground and to prevent the inadvertent movement of defenders through minefields.

5.32 Early warning devices, such as booby traps and trip flares, are placed around a defended location to warn of enemy approaches, to deny certain routes in conjunction with other obstacles and to destroy enemy groups by explosive ambush. The channelling effect of urban terrain is exploited by the placement of booby traps at defiles and likely fire or observation positions. The following are likely points:

a. close to the base of walls, especially at corners or the ends of walls;

b. below windows, doors and other gaps in walls;

c. at gaps between buildings; and

d. at roof access and firing positions.

5.33 The use of mines and booby traps is described in *LWP-G 3-6-5, Mines, Booby Traps and Improvised Explosive Devices*.

5.34 **Command-detonated Explosives.** Command-detonated explosives provide one of the main destructive weapons for the urban defender. Claymore-type devices may be sited to cover immediate approaches to buildings and interior approaches. These can be fired from fighting positions that overwatch activity in the EA. These mines may be sited to cover the dead spaces outside a building. Each mine should have two firing cables: one leading to the defended building and one to a neighbouring position from where the approach may be viewed. Larger explosive and flame fougasse charges are placed in buildings, obstacles, FUP and firing positions around the defended position. These should be detonated under enemy groups or vehicles and may collapse buildings across routes. They should have at least two firing circuits and laddered firing cables. The mines should be concealed and protected. Cables that cannot be buried or run through underground pipes may be suspended along telegraph or power lines. The cable laddering system will ensure that a cut cable will not sever the circuit. During the preparation stage, power lines must be switched off to avoid the creation of a hazard.

5.35 Electronic Sensor Systems. There is considerable scope for deploying improvised sensor systems based on domestic or commercial intruder alarms. These may be used to provide a sensor barrier that gives warning. If the necessary expertise is available, such systems may be improvised to initiate mines and traps.

5.36 Clearance of Cover and Access Aids. Friendly forces should remove local cover and any access aids that may be used by the enemy to enter the defended buildings or to breach obstacles. These include:

a. building fittings that may conceal or aid climbing, including drainpipes and antenna cable;

b. bridging materials such as planks, beams and ladders (to be smashed, utilised by own forces or removed from the immediate area); and

c. foliage that may provide concealment or access and may aid entry into buildings.

5.37 Concealment and Deception. As far as possible, all signs of defensive preparation are to be concealed. Where they cannot be fully hidden, the visual signatures are duplicated widely over an area. Concealment depends initially upon blending preparations with existing urban structures. Foliage may be used as a screen. After an area has been engaged, positions can be hidden more easily among rubble. The following may be used to assist concealment and deception:

a. *Foliage.* Foliage is used to conceal firing points and other defence preparations. Bushes and plants may be transplanted to achieve this effect.

b. *False Structures.* False structures can be constructed in front of defensive positions to be pulled down or dropped away after contact. False roofs and walls may be constructed to abut a building, particularly to conceal AFV.

c. *False Fittings.* False fittings take the form of window frames and doors. These may be removed from other buildings and fixed into place over loopholes.

d. *Duplicate Sign.* Efforts should be made to duplicate, throughout the area, all distinctive preparations made on the defended buildings. Windows should be randomly selected to be opened or stripped of glass. Tiles can be removed from roofs while holes are knocked in walls.

e. *Dummy Positions.* In accordance with the deception plan, dummy positions may be constructed inside and outside buildings. The aim is to deceive the enemy into committing troops to the destruction of these positions, thereby increasing exposure to counterattack by assault, direct firepower or command-detonated mines. To add credibility to dummy positions, one or more steps should be taken:

(1) The position or the area nearby is initially occupied by a standing patrol, which then withdraws.

(2) The position is fitted with simulators that represent weapon firing movement.

(3) The position is placed near off-route mines.

(4) Depth weapons are sited so that their weapon fire appears to originate from the dummy position.

Stages of Occupation and Development

5.38 Occupation and development consists of a number of stages. For each stage, the planning times are given, but can vary with the circumstances, particularly the types of building construction encountered, the condition of troops and the availability of plant. The following stages apply in the planning of urban defence:

a. *Stage 1.* At Stage 1 (up to 8 hours), buildings are occupied. The preparation of central shelters, trenches or cellars is commenced. Fire and observation positions

are set up. The defenders should be able to survive, carry out essential administration and fight.

b. *Stage 2.* At Stage 2 (up to 24 hours), buildings are prepared to withstand bombardment and enemy attack. Fields of fire are cleared and mouse-holing is completed.

c. *Stage 3.* At Stage 3 (24 to 48 hours), alternative buildings are prepared to Stage 1 or Stage 2 and linked with connecting routes. Obstacles, wiring, mining and booby trapping are completed.

Occupation Drills

5.39 The occupation procedure in urban environments does not differ from the normal procedure. The primary consideration is that the area needs to be cleared and the civilian population removed without compromising the objectives of various information actions.

5.40 The urban occupation procedure is as follows:

a. *Clear the Position.* Clearance takes place at the position to be defended and its immediate surroundings.

b. *Post Security.* Sentries are posted to cover all possible directions of the enemy's approach. Each sentry must have communications with the CT. This can prove difficult if the need for effective observation dictates that sentries are posted externally to or on top of buildings.

c. *Site Key Weapons.* Selection is made of the arcs of fire and positions for the key weapons. The key weapons are light support weapons, crew-served antitank weapons, sniper rifles and sustained fire machine guns. Troops identify likely alternative positions within the arcs for which they are to be responsible.

d. *Select Command Position.* The commander selects a position from where C2 of the element can be most effective. This position should normally observe the key arc of fire, the priority concern being the ability to communicate with troops.

e. *Site Remainder.* The remaining troops are allocated positions with primary arcs of fire. These arcs form a framework of observation and fire around the defended position. Placed into a position, the troops identify likely alternative positions that cover the same or similar arcs. Identification is made of secondary arcs that can be covered from the primary position. Temporary positions are identified to enable the reserve or other troops to concentrate firepower in any particular sector. The plan must ensure that troops can be moved to concentrate force without compromising security on any approach. This may be achieved by a reserve held ready to deploy. As an alternative, one soldier of the pair in each position or room may be nominated to be ready to redeploy. It is preferable that a committed reserve be formed. Sections that are not reinforced will have difficulty achieving all-round defence from within a building, even before the reserve is formed.

f. *Prepare Fire Positions and Coordination.* The troops prepare their primary firing positions. At the same time, the sub-unit commander moves around, adjusting arcs, filling gaps, confirming one or more alternative positions for each arc of fire, and selecting any further secondary position and arcs, particularly those covering the insides of buildings. Soldiers are briefed on the extent of neighbouring firing position arcs. Identification is made of different alternative or secondary positions that can be used at night.

g. *Select Shelter.* The element commander selects the central shelter.

h. *Rehearsals.* As soon as primary firing positions are completed, a rehearsal must be carried out. This will involve stand-to, redeployment to secondary positions and counterattack actions.

i. *Preparation of Position.* The position is prepared in a sequence determined by specified priorities of work.

Development of Position

5.41 A defensive position may be developed using the following suggested priority of work:

a. Clear fields of fire and prepare firing positions and OP including the opening of windows and moving of furniture.

b. Dig shell-scrapes for external positions in areas of light construction, with trenches dug immediately.

c. Clear glass from windows.

d. Block all unused doors, windows and chimneys.

e. Build barricades in rooms from windows or by knocking firing loopholes into internal walls that cover out through windows.

f. Make loopholes in doors and walls to cover approaches.

g. Nail or tie wire mesh wire over window frames to keep grenades out.

h. Dig trenches for external positions and knock holes in walls for access.

i. Construct shelter positions for all troops: either a central shelter in a strong part of the building suitably reinforced, with preparation of a cellar, or shelter trenches dug beneath or behind the building.

j. Make mouse-holes for freedom of movement between rooms and buildings, and develop crawl trenches for external positions.

k. Construct substantial fighting positions.

l. Remove flammable material, turn off the gas and electricity, and fill all baths, sinks and containers with water.

m. Shore ceilings with timber and sandbags, and reinforce walls around fighting positions.

n. Make holes in floors/ceilings for dropping grenades and for moving up and down on ropes.

o. Block or limit staircase access with wire or nailed boards.

p. Place obstacles on approaches.

q. Place obstacles inside buildings on all routes not needed by defenders.

SECTION 5-3. FIGHTING FROM DEFENSIVE POSITIONS

Considerations

5.42 The considerations for urban defensive operations are the same as in other environments, with the additions detailed in the following paragraphs.

5.43 Work Program. The work program must be planned so that a response to enemy action can be made at any time. This requires the following to be achieved:

a. *Logical and Clear Priorities of Work.* During the construction of obstacles consideration must be given to the effects of future work of restrictions in access. When preparing the building/area for defence, the blocking of windows must not precede detailed work inside because light will be required for troops. The use of plant equipment must be carefully planned, with fully briefed guides available to direct operations.

b. *Security.* Consideration needs to be given to the three-dimensional nature of the urban battlefield, and consequently the positioning of additional sentries may be in more isolated positions than normally accepted.

5.44 Opening Fire. It will often be difficult to decide when to open fire during the urban defensive battle. All junior commanders need to be aware of the ROE and orders for opening fire due to the fleeting nature of targets and difficulties in target identification. Targets will be indistinct and difficult to identify or

confirm. Main defensive positions should seek to avoid revealing weapon positions for as long as possible. Commanders will wish to delay mounting the attack until firepower can be concentrated. The matter is further complicated when friendly forces are deployed forward. It is vital that all troops and sentries have clear orders on when they will and will not engage. In engaging an enemy detected forward of a position, and to avoid revealing the defensive layout, the order of priority for fire might be as follows:

a. indirect fire,

b. sniper fire,

c. standing patrol weapons,

d. soldiers redeployed to engage from secondary positions,

e. remotely fired mines, and

f. the weapons of the main defensive fighting positions.

5.45 Reserves. Every self-contained position will maintain a reserve. An enemy assault will often occur with little or no warning, requiring a response within seconds rather than minutes. Within a single building, use may be made of alternative soldiers or those covering non-framework arcs away from the enemy assault. They can prepare to deploy as the local reserve.

5.46 Offensive Action. Enemy close assaults are automatically met with grenades or command-detonated mines or explosives. Penetrations of the defence may be regarded as an opportunity to cut off and destroy enemy groupings through local ambush or counterassault. Reserves are used aggressively in conjunction with direct and indirect firepower. They can be tasked to outflank and destroy any enemy detected within an area of responsibility.

5.47 Rapid Redeployment. Forces at all levels may have the capacity to be redeployed quickly for the sake of survival and the effectiveness of offensive action. Engaging continuously from one position, troops will be quickly identified and

neutralised by the enemy. The construction of alternative defensive positions must be considered far more than in other forms of defence in order to maximise force survivability. The commander must be able to concentrate force quickly, apply intensive effective firepower and disperse the force before an enemy response can be orchestrated. This requires effective observation and reporting, clear communications, rapid decision-making, secure internal routes, and well-rehearsed and coordinated actions.

5.48 Personal Control. Tight control of redeploying forces is needed if forces in contact are to be deployed effectively. The commander achieves this by careful positioning to enable an effective reading of the battle and an ability to take personal control of offensive action.

5.49 Defensive Fire Planning and Control. Effective employment of all fire support assets is vital so that the enemy is denied further progress. Defensive fire planning and control is more difficult in urban environments because of the restricted fields of observation, communication difficulties, and proximity to the enemy and civilians. In the rapidly changing urban battle, fire support must be rapidly responsive and simple to apply. Fire control will be based on the following series of coded pre-planned targets:

a. *Personal.* Fire positions are given an FPF target to be engaged on an FPF signal. Use is made of aids such as pre-positioned sandbags and marks on apertures. These ensure that fire can be directed blind. If the FPF signal is given, particularly during enemy close assault under smoke, the FPF targets are fired on by all nominated weapons for a given period or a given number of rounds.

b. *Target Names.* Target nicknames are given to the area and to the buildings around a defended position. These are recorded on range cards and marked on the building walls. Indication aids are fixed at each firing position to allow the blind engagement of close targets.

Commanders and sentries must provide rapid indication and application of fire to targets.

c. *Close Mutual Support Signals.* Because of the dead spaces around a defensive position, the defence relies heavily on mutual support between buildings to achieve all-round defence and security. Under obscuration and darkness, coordination of this fire can be difficult and slow. Arrangements are made for specified signals by sound and light as well as by landline or radio. These are rehearsed to allow one position to call close fire from another.

d. *Indirect Target Designators.* Indirect targets are recorded in a pattern around the defended area. These are set up to provide rapid response and can be called either by code word on radio and landline or by light signal.

Defensive Drills

5.50 In addition to the normal fire control methods, two drills are used for defensive engagement. The first is designated for a deliberate engagement and the second involves a reactive engagement.

5.51 **Deliberate Engagement.** The stages of a deliberate engagement are as follows:

a. *Detection.* The enemy is detected and reported to the local commander by target nickname.

b. *Concentration of Weapons.* Troops are redeployed within buildings or positions so that maximum fire can be applied to the target area. Troops must not be concentrated into a small and vulnerable area.

c. *Deliberate Fire.* The enemy is engaged by a sudden intense burst of fire on a prearranged signal.

d. *Dispersal.* Key weapons continue to cover the target area, while the redeployed troops return to their original

positions or to cover in depth before enemy fire support can respond.

e. *Report Effect.* A report of the effects on the enemy is sent by troops operating the key weapons.

5.52 Reactive Engagement. The stages of a reactive engagement are as follows:

a. *Fire.* The decision is made by a soldier to open fire immediately. The firing alerts the position.

b. *Indication.* As the soldier engages, they shout the target direction, nickname or other clear indication of the area of attack. Any other directions of assault are immediately called if seen by other soldiers as they observe their arcs.

c. *Reserve Stand-by.* The local commander attempts to interpret the enemy activity. The nominated reserve either concentrates or listens for deployment orders from their fighting positions.

d. *Reserve Commitment.* The reserve may deploy if necessary in response to the enemy action.

SECTION 5-4. DELAY AND WITHDRAWAL

5.53 Urban terrain is conducive to the conduct of delay. Delay is a major part of urban defence.

5.54 Withdrawal will generally be similar to that undertaken on other terrain, and conventional procedures will be used. The withdrawal may need to be screened by a delaying force as required. Typical delaying operations involve small elements, each denying separate routes by falling back on a series of denial positions, interspersed with ambushes and counterattacks.

5.55 Further information on the delay and withdrawal can be found in *LWD 3-0-3, Land Tactics*.

CHAPTER 6

STABILITY TACTICS, TECHNIQUES AND PROCEDURES

SECTION 6-1. INTRODUCTION

6.1 Urban areas are the centres of population, culture, economy and government and are therefore decisive in stability activities. Much of the support provided by land forces aims to assist local, regional or national governments within a whole-of-government approach. Urban areas will, by necessity, be a dominating factor, and interaction, influence, control, or protection will be required for all or parts of the civilian population. Assessing, understanding and gaining the support of civilians in key economic, cultural or political urban areas may have an influence on surrounding regions (smaller urban areas and the rural countryside) and may be decisive to achieving stability objectives. Commanders execute missions with the knowledge that eventually the national (local) government and administration will secure and support their population by themselves.

6.2 The intent of this chapter is to provide the required background knowledge and describe the TTP applicable to all corps in relation to stability operations within the urban environment. This chapter describes the following:

a. key point and asset protection,

b. traffic and vehicle control points,

c. cordon and search, and

d. crowd control.

SECTION 6-2. KEY POINT PROTECTION AND VITAL ASSET PROTECTION

6.3 Key point protection (KPP) and vital asset protection (VAP) involve the physical protection of infrastructure, resources and personnel. Protective operations are defensive in nature and utilise basic defence TTP. Due to the nature of the link of vital assets to the community, the majority of these facilities reside within the urban environment.

6.4 KPP and VAP are realistic and universal tasks that all corps can expect to participate in to a greater or lesser degree on operations. Their purpose is as follows:

a. to enable military operations to continue without interference;

b. to avoid disruption to normal life/civil welfare;

c. to maintain law and order;

d. to prevent adverse effects on a nation's economy;

e. to maintain the morale of the population; and

f. to maintain military superiority.

Definitions

6.5 **Vital Asset.** A vital asset is a facility, installation or resource, the loss of which would severely disrupt the orderly life of the community or which, if damaged, would cause a major hazard. Vital assets include power stations, refineries, transportation facilities, and other buildings or installations so designated by the civil authority.

6.6 **Key Point.** A key point is a concentration, site or installation which, if it were destroyed or captured, would seriously affect military operations. Key points may include installations such as communication centres, airfields, ports and border crossings, or military locations such as forward operating bases and patrol bases.

6.7 **Critical Point.** A critical point is a nodal point within a vital asset, the loss, damage or destruction of which would render the vital asset inoperable and which, therefore, must be provided with close protection. An example of a critical point is a generator within a communications facility which supplies the installation with power, without which the facility would become inoperable.

6.8 **Sector.** A sector is an area designated by boundaries within which a unit operates or for which it is responsible.

Characteristics

6.9 KPP and VAP are unique forms of defence in that they are typically characterised by the following:

a. There is little or no choice of ground for the defending force.

b. They are employed in the vicinity of populated areas and/or within the urban environment.

c. Civilians will be present both within the facility and in the immediate surrounds.

d. Avenues of approach to the facility will be numerous and often concealed due to the nature of the urban environment.

e. The facility may require the employment of specialist personnel to continue functioning.

f. The installation may have above- and below-ground assets and/or access.

g. The asset has a critical reason for existence, and therefore defensive operations cannot be allowed to inhibit the operation of the facility.

h. The asset is likely to have an established operating routine.

6.10 As a result of the characteristics described in paragraph 6.9, some of the traditional concepts associated with defence will not apply. As the facility is likely be located amongst the people,

conventional concepts such as the forward edge of the battle area and FLOT, and specific defensive concepts such as distinct, discrete and predictable EA, depth by fire and free fire lines are not tenable.

Considerations

6.11 The planning and conduct of KPP and VAP should be conducted in accordance with the principles of and considerations for the defence. However, due to the specialised nature of KPP and VAP, some additional aspects should be considered, as follows:

a. *Limit and Control Points of Entry.* The methods that the enemy can utilise to damage or destroy the facility will be discussed in detail in paragraph 6.13, but one of the simplest and most cost-effective methods is sabotage. By limiting access to the facility, this method of attack can be negated simply and effectively. To thoroughly control POE in the urban environment, it may be necessary to block and cover subterranean and super-surface access points such as rail and sewerage systems, electrical conduits, and adjacent rooftops.

b. *Deny Observation and Influence.* Where possible, avenues of approach and the opportunity to conduct reconnaissance and surveillance of the objective should be denied to the enemy. This can be conducted through active defence measures such as patrolling, or through passive defence measures such as placing hessian along facility fences, utilising early warning devices and sensor systems, and siting light towers facing out on the perimeter to create a contained shadow within the facility at night. Remember that the urban environment is three-dimensional and that this may be difficult to achieve at times.

c. *Maximise Physical Protection.* Apart from obvious force protection measures such as constructing blast walls and bunkers, aspects such as restricting or denying vehicle movement into the facility should be considered.

For example, the facility will still function if employees are required to park adjacent to the facility and enter through a personnel checkpoint, and this action would reduce the risk to friendly personnel and the facility itself. However, this option may not be applicable in the case of resupply vehicles or garbage trucks.

d. *Utilise Existing Security Assets.* Many key points and vital assets already possess their own security infrastructure. This can vary in its sophistication from lighting or a security guard to state-of-the-art motion sensing and closed-circuit television systems. At a minimum, a senior staff member or manager should be utilised to help identify and screen personnel at the entry checkpoint.

e. *Sustainability.* The nature of KPP and VAP lends itself to protracted operations. As a result, the sustainability of forces is one of the chief considerations. Rest and rotation plans must be implemented at the earliest opportunity if the force is to remain combat effective.

Threat Force Actions

6.12 In order to effectively protect a vital asset or key point, its value to a threat force and their capabilities must be clearly understood. The mnemonic 'CARVER' is used to aid in planning and is described as follows:

a. **C** = Criticality – whether the asset, or this particular aspect or part of the asset, is critical to either a military objective or normal civilian life;

b. **A** = Accessibility – whether the asset is easily accessible to threat forces;

c. **R** = Recovery – whether, if the asset, or specific part of the asset, is destroyed, it could be repaired or replaced very quickly;

d. **V** = Vulnerability – whether the specific asset is vulnerable to the weapons or other assets of the threat force;

e. **E** = Effect – whether there will be a large effect if the asset is destroyed or rendered inoperable; and

f. **R** = Recognisable – whether, if the asset is damaged or destroyed, it will be noticed by the military, civilians or the media and thus have a psychological or information actions objective.

6.13 Many options are available to the threat force in relation to KPP and VAP. These are as follows:

a. destroy by overt means such as assault, bombing or the use of indirect weapons, or by targeting key staff or operating resources;

b. destroy by covert means such as sabotage, prevention of staff attendance or subversion, or by closure or abandonment due to political or social pressures;

c. capture by overt means such as assault, or covert means such as infiltration or subversion;

d. gain intelligence for later use in reconnaissance, surveillance, infiltration or subversion operations; or

e. any combination of these means.

Conduct

6.14 The occupation, establishment and conduct of a KPP and VAP task take place conducted in accordance with the normal principles of defence. The main exception to this is that there must be an increased focus upon clearing and securing the site during the occupation, as the facility is likely to be a series of buildings (cleared as in any urban clearance operation), and threat elements may already be covertly operating within the installation prior to the arrival of friendly forces. Two broad methods for the conduct of KPP and VAP are sector defence and layered defence.

6.15 **Sector Defence.** Sector defence involves dominating the approaches to the key point through a permanent physical presence such as the establishment of a perimeter. By its static nature, this method allows freedom of action for threat forces to

conduct reconnaissance and surveillance and, potentially, stand-off attack. However, this method causes the least intrusion on or interference with the civilian population and may be a worthwhile option if factors such as maintaining the consent of the local populace are critical to mission success, or if the force allocation to the conduct of the defence is small. The diagram in Figure 6–1 represents sector defence.

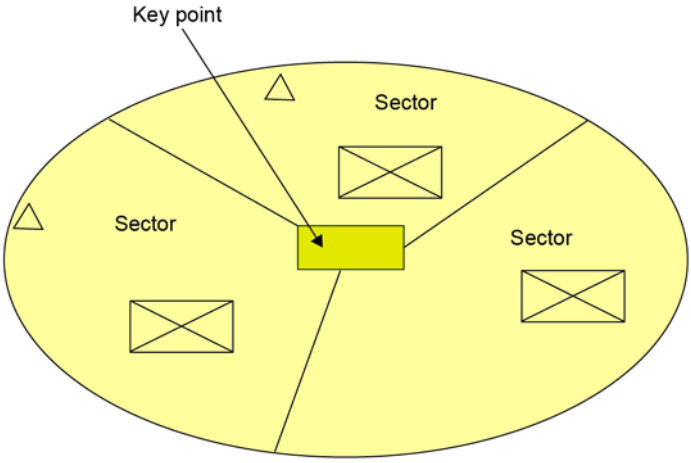


Figure 6–1: Sector Defence

6.16 Layered Defence. Layered defence involves both the establishment of a perimeter and the conduct of actions to deny the threat force freedom of action outside (but in vicinity of) the perimeter. Typically, this is conducted through screening actions outside the perimeter such as patrolling, and snap vehicle control and traffic control points.

6.17 The layered defence method provides enhanced security for the protected asset but has a more intrusive effect upon the community and, to be sustainable, requires a greater allocation of manpower. A diagram representing layered defence is shown in Figure 6–2.

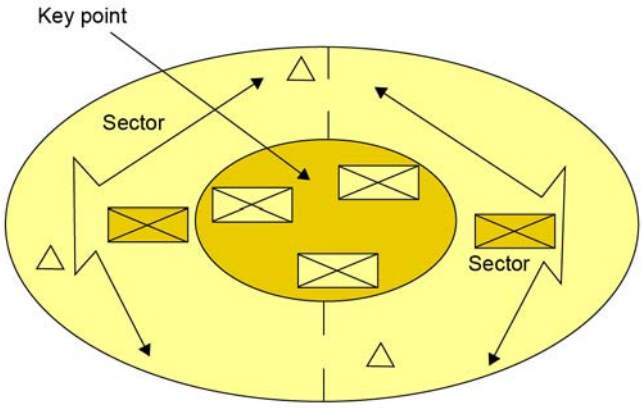


Figure 6–2: Layered Defence

6.18 Regardless of the method chosen, successful KPP and VAP is reliant upon sound planning and a thorough integration of passive and active defensive measures.

SECTION 6-3. TRAFFIC AND VEHICLE CONTROL

6.19 Vehicles offer the easiest method of introducing large quantities of explosives into a target area. With careful planning and reconnaissance, an enemy will always have a chance of getting a vehicle-borne improvised explosive device (VBIED) to the intended target provided that it is physically possible to drive the vehicle to that location. The key to defence against vehicle bombs is to make it impossible for a vehicle to get close enough to a target to damage it by the use of ditches, walls and bollards. Defence can be improved through active security measures.

6.20 The following guidelines should be observed:

a. Vehicles should not be able to get to within 25 m of possible targets. This will prevent the majority of

western-style buildings from collapsing when exposed to a VBIED. If this cannot be achieved:

(1) Buildings that could easily collapse should be used for low-value purposes (eg, stores).

(2) Personnel who occupy buildings that may collapse should occupy the end most remote from the likely source of vehicle bombs. If they cannot move, the building must be strengthened.

b. If a VBIED is detonated, there will be casualties over a wide area from flying glass and debris. Therefore:

(1) Car parks should be remote from buildings.

(2) Stores areas (where deliveries have to be made) should be remote from where people work.

(3) Basement car parks should be used for other purposes.

Vehicle Checkpoints

6.21 Vehicle checkpoints are normally constructed in the form of a chicane, illustrated in Figure 6–3. This is made of two or more half-road-width obstacles spaced 15 to 20 m apart on alternate sides of the road, so that a vehicle must slow down to pass through. For a temporary checkpoint, knife rests or parked vehicles may be used to form the chicane, while 200 L drums filled with rubble or concrete blocks can be used for more permanent checkpoints. A system of speed humps may also be used to force vehicles to reduce speed. A vehicle checkpoint should not be adjacent to a building in the defence.

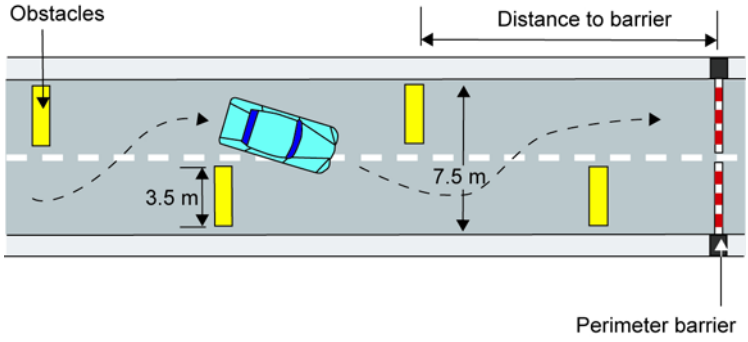


Figure 6–3: Chicane for Vehicle Checkpoint

Entry System Design

6.22 An access point for normal traffic in and out of installations has to be established through the perimeter zone; unfortunately, it is also a point of weakness that the enemy can exploit. The greatest vulnerability of an entry point is the chance it offers to someone with legitimate business to introduce a bomb into the site, be it unknowingly, under duress or by proxy. The problem is how to prevent this happening while still allowing a normal flow of traffic through the access point. A facility's entry system should be developed and instituted to ensure that the following points are observed:

a. The number of access points is to be kept to a minimum, preferably limited to one. There should be no 'special arrangements' that allow personnel to use side entrances, or for the delivery of stores or the removal of rubbish.

b. Vehicles should be separated from people on foot.

c. Entrance and exit traffic are to be separated wherever possible.

d. The control of vehicle movement should make it impossible for a vehicle to crash through the entrance. After passing through an outer gate, the vehicle should

be slowed and halted in a sealed area, where identification and the entry authority can be checked. This will allow a proxy to be discovered.

e. The number of civilian vehicles allowed to pass into the barracks area should be an absolute minimum. Goods should be delivered to a separate secure compound on the perimeter, unloaded and then passed through the perimeter by domestic staff using military transport. This may appear an over-elaborate safeguard when set against the current threat, but it should be implemented.

f. The guard is to be able to control entry without being exposed to attack from outside. If the access point is hidden from outside view, the enemy cannot assess the status of the guard force before committing to an attack.

g. Examples of the layout of an entrance control system are given in Figure 6–4 and Figure 6–5.

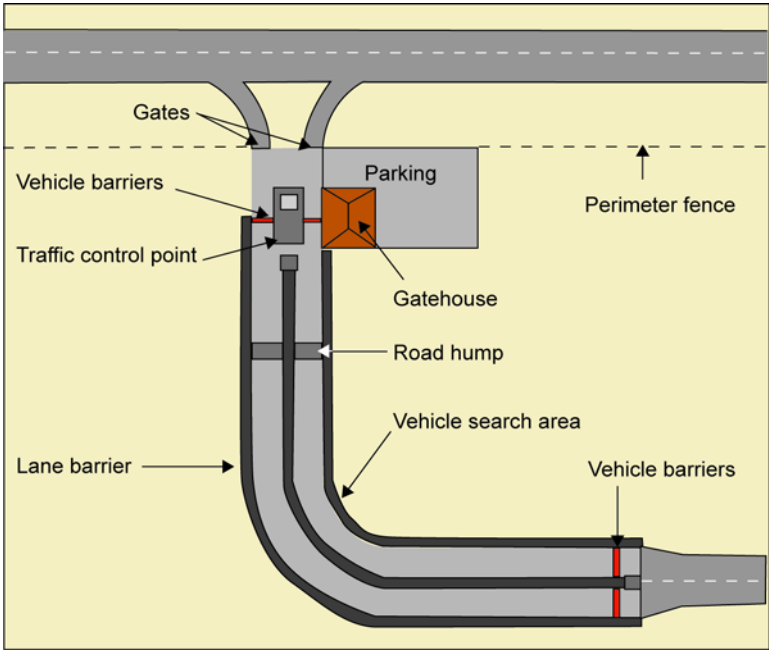


Figure 6–4: Entrance Control – Low-level Threat

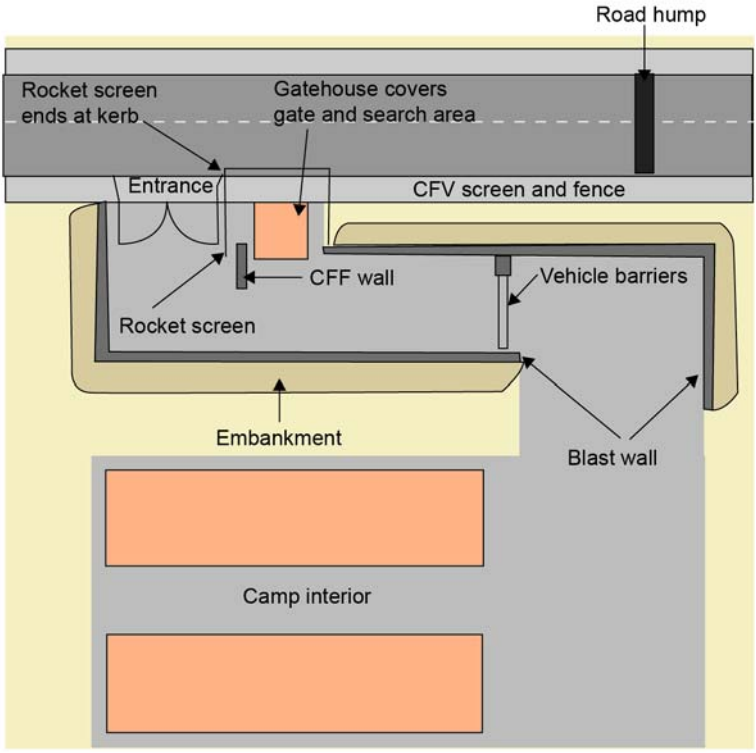


Figure 6–5: Entrance Control – High-level Threat

SECTION 6-4. CORDON AND SEARCH

Considerations and Battle Preparation

6.23 Reference Points. Prior to the conduct of cordon and search operations, it is very useful to coordinate reference points between all FE to enable the rapid communication of issues as they arise. ‘Spot maps’ are often a readily available source of joint reference points. If these are unavailable, naming and marking buildings, key intersections and such other features on all friendly maps will perform the same function.

6.24 Communications. During the conduct of cordon and search operations it is useful to maintain as few communications nets as possible. Where achievable, it is very useful for overwatch elements, cordon forces and the search element to be communicating on the same network, as this will allow for real-time information feeds such as the number, description and location of withdrawing threat elements.

6.25 Equipment. All FE should deploy with adequate equipment for their role within the urban environment. As an example, a searching force may require much the same equipment that a force involved in an urban assault does. Cordon forces may require countermobility obstacle construction equipment such as vehicle barriers or caltrops and, where possible, all FE should be equipped with communications equipment to monitor the progress of the operation.

6.26 Overwatch. The urban environment is characterised by great difficulties in maintaining situational awareness. Overwatch elements such as air support, snipers, or even regular forces located at elevated positions such as rooftops providing battlefield commentary, are excellent tools to aid in maintaining situational awareness.

Cordon and Search Techniques

6.27 Three different broad techniques are described in the following paragraphs. The choice of a particular technique will be dependent upon a number of factors, including the intent of the mission, the level of detail and accuracy of the intelligence, force ratios, the threat, and the attitude of the local population. The specific techniques to be discussed are as follows:

a. cordon and search,

b. cordon and strike, and

c. block and sweep.

6.28 Cordon and Search. Cordon and search operations are conducted to isolate and systematically search an area in which it is suspected that parties of insurgents and their sympathisers, military equipment or supplies may be

concealed. As cordon and search is described in detail in *LWD 3-0-3, Land Tactics* it is not covered in this publication. However, it is important to note that cordon and search implies the systematic search of an entire area, differentiating it from the other methods discussed here.

6.29 **Cordon and Strike.** The cordon and strike method refines the concept of the cordon and search further by targeting a specific objective(s) within the cordoned area rather than conducting a systematic search of an entire area. This is a particularly useful concept within the urban environment, as the whereabouts of specific targets may be known in detail (eg, Building 19 and Building 22 within a city block), enabling friendly forces to conduct targeted operations without the resource-intensive task (time, manpower, equipment and ammunition) of detailed clearance through an entire area, street or block.

6.30 Cordon and strike is reliant upon detailed and accurate intelligence about the threat force, the objective itself and the surrounding populace. Due to the physical dislocation between the strike element and the cordon force, the strike element must be able to provide a greater level of security, and therefore will typically involve greater force allocation than a simple search element. It is a particularly important consideration in this type of operation that surprise should be achieved and maintained throughout all phases of the operation, including the reorganisation and extraction, as the operation has the potential to incite further hostile activity by either members of the threat force or civilians who resent the intrusion of friendly forces into their environment.

6.31 **Block and Sweep.** The block and sweep method is an operation involving two primary manoeuvre elements (not including any designated reserve force), being the block element and the sweep element. The intent of the block and sweep operation is to capture, kill or shepherd threat forces with the sweep element. The block elements are placed surreptitiously upon the primary exfiltration or withdrawal routes for threat forces from the targeted area.

6.32 The block and sweep method can target a far larger area than either of the other two methods or can utilise a smaller FE to cover the same area. However, it does not guarantee the same level of effect upon the threat force as the other two methods, as it is possible that a well-trained and well-informed force could escape. This method is very useful when specific intelligence is unavailable to friendly forces, allowing a greater area of influence/operation.

6.33 A number of different methods of clearance are available to the sweeping force, such as urban patrolling and 'soft knock' and 'hard knock' clearance. These methods are described as follows:

a. *Urban Patrolling.* The simple presence of a force conducting urban patrolling may provide enough incentive for a threat force to withdraw to what they perceive to be a safer location.

b. *Soft Knock.* The term 'soft knock' simply implies that the clearing element will not by default force entry to any of the buildings within the area without a specific threat or intelligence to that effect. Rather, they conduct actions such as literally knocking on doors, questioning indigenous personnel on the street and within houses in regards to suspicious activity, and so on. Subsequently, when specific intelligence becomes available, they shift to 'hard knock' clearance or other actions in accordance with their commander's intent. As with urban patrolling, this method may evoke threat force action such as withdrawal or offensive action. One of the benefits of the soft knock clearance method is that it enables friendly forces to maintain consent of the populace by having a much smaller footprint on the environment than a 'hard knock' clearance. Additionally, the equipment and skills required to conduct the soft-knock method are significantly less than the hard-knock method.

c. *Hard Knock.* The hard-knock clearance method is effectively conducted as an urban assault. Further

details pertinent to this method are contained within Chapter 4.

SECTION 6-5. CROWD CONTROL

6.34 This section provides background knowledge and describes TTP applicable to all corps in relation to crowd control within the urban environment. Due to the nature of the urban environment, soldiers operating therein can be faced with rapidly developing situations involving crowds where violence can escalate dramatically if crowd control is handled incorrectly.

6.35 The doctrine on crowd control is contained in *LWP-G 3-8-2, Population Protection and Control Techniques*, which has been written to cover the training for, and the conduct of, deliberate population protection and control activities. This section outlines the various levels of resistance or threat a crowd may pose, the use of force, the IA drill to be utilised when confronted by a crowd control scenario and the use of vehicles.

Noncombatant Population Control

6.36 Control of the noncombatant population is vital, and one of the most challenging tasks to face a tactical commander. In order to understand and control the population of an urban area, the commander should gather knowledge of its size, location, density and composition. These elements may be examined in terms of the area as a whole, but complete understanding will only come by examining those same elements for each geographical area and each demographic group within the urban area. Commanders maintain or enhance the credibility and legitimacy of the government and police of the urban area, and of the host nation's military forces operating there. Urban commanders should conclude control activities quickly and successfully so that assets may be used elsewhere in their area of operations (AO). This entails returning the control of the urban area back to civilian responsibility as soon as feasible.

6.37 Tasks for the control of the noncombatant population are as follows:

a. conflict containment,

b. crowd control,

c. curfew,

d. prisoner and detainee handling,

e. the protection of civilians,

f. refugee movement,

g. the separation of hostile forces,

h. the supervision of a ceasefire, and

i. preserving resources.

6.38 **Conflict Containment.** Early in the control phase of stability activities, the containment of conflict must be achieved. CT will be moving from a defensive or offensive role into the control phase in dealing with any belligerent forces or insurgents.

6.39 **Crowd Control.** FE will need to employ crowd control measures in the early stages of stabilisation. In the absence of police, rioting and looting will be a threat to security in the urban area.

6.40 **Curfew.** Curfew is an effective measure to control criminal activities. Like crowd control, in the absence of police, an FE may need to consider curfew to restore law and order.

6.41 **Prisoner and Detainee Handling.** The detaining of prisoners must be conducted in accordance with international humanitarian law and the Geneva Conventions. Measures must be in place to ensure the security, correct processing, health, and treatment and detention of prisoners and detainees. If a suitable detention facility in the urban area cannot be established, arrangements for the secure movement to a suitable facility should be made until a facility can be established.

6.42 Protection of Civilians. Security for NGO and civilians may also be an important shaping operation, particularly for support operations. Commanders may need to provide security to civil agencies and NGO located near or operating in the urban area so that these agencies can focus their relief efforts directly on the emergency. Commanders may also need to protect the urban population and infrastructure to maintain law and order if the urban area's security or police forces are non-existent or incapacitated. In particular, protection from criminal activity and insurgents is an important task. In the control phase of stability activities, it is vital to maintain the civilian population's confidence in the occupying FE. Again, police action will be a key role of the FE until a police force can be restored or established.

6.43 Refugee Movement. The control measure of refugee movement is important in order to open lines of communication to the urban area. Logistic support will need to be employed to secure and safely move refugees.

6.44 Separation of Hostile Forces. Belligerent forces should be segregated or separated. The tactical security of the urban AO is important to enable restoration activities to occur. The establishment of areas of separation, regular patrolling and border checkpoints are effective control means to separate hostilities. A well-defined mandate and orders for opening fire is vital in ensuring the success of the area of separation.

6.45 Supervision of Ceasefire. A supervised ceasefire is essential and should be achieved early in the control phase of a stability activity.

Definitions

6.46 Force. This refers to a number of verbal, physical and mechanical techniques used on an individual to compel them to do something, or on an object to overcome resistance. Force can be less than lethal or lethal in effect.

6.47 Lethal Force. Lethal force means force intended to cause death or serious harm or which a reasonable person would

consider likely to create a substantial risk of causing death or serious harm.

6.48 **Less-than-lethal Force.** Less-than-lethal force means force which is not intended to cause death or serious harm or which a reasonable person would consider unlikely to create a substantial risk of death or serious harm.

6.49 **Minimum Force.** Minimum force means that a person must not use greater force to achieve their lawful objective than they have reasonable grounds to believe is necessary in the circumstances. Any force used must be as follows:

a. relative to target subject's resistance level,

b. capable of being escalated and de-escalated as necessary, and

c. ceased upon lawful objective being achieved.

6.50 **Use of Force.** The operational authorisation for the use of force is to be in accordance with both ROE and orders for opening fire. The ADF is fully accountable for any force used and is continually subject to public scrutiny. Individuals are responsible and accountable for their actions under *Defence Force Discipline Act 1982* and Australian criminal and civil law. Any person who uses force is responsible for doing so unless the use of force is lawfully justified.

6.51 **Designated Person.** A designated person means an ADF member, a member of a foreign armed force, a Commonwealth official, a civilian assisting, and so on.

Levels of Resistance or Threat

6.52 Crowds (and specific individuals within crowds) encountered may pose many different levels of threat or resistance. The level of the resistance can vary from intimidation all the way through to potentially lethal force. It is important to differentiate the level of resistance or threat posed by a crowd (or an individual within a crowd), as this will shape the friendly force response in accordance with the ROE and the use of force continuum (UFC), to be described later in this chapter.

6.53 The various forms of resistance that may be adopted by hostile personnel include:

a. *Intimidation.* Non-verbal cues indicating intent to resist control may include staring, ignoring and minor disturbances.

b. *Verbal Resistance.* Verbal resistance may include insulting and abusive language or negative responses. There is no immediate danger of physical harm to soldiers.

c. *Passive Resistance.* Passive resistance may include peaceful demonstrations, sit-ins, and standing or lying still. There is no immediate danger of physical harm to soldiers.

d. *Defensive Resistance.* Defensive resistance attempts to prevent control. It may include blocking, pushing and fleeing. There is no immediate danger of physical harm to soldiers.

e. *Active Resistance.* Active resistance describes those physical actions (or imminent actions) which attempt to prevent control and which are likely to cause physical harm to soldiers and/or designated persons. It may include unarmed attack with punches and kicks.

f. *Potentially Lethal Resistance.* Potentially lethal resistance describes those physical actions (or imminent actions) that are likely to cause serious harm or death to soldiers and/or designated persons. It may include armed attacks involving guns, knives and other weapons.

Use of Force Continuum

6.54 As described in the preceding paragraphs, resistance levels vary. Therefore, all personnel require an understanding of the appropriate levels of force to respond to an individual's level of resistance. The response option must comply with the specific ROE of the friendly force at all times and meet the standard principles of minimum application of force.

6.55 The UFC (see Figure 6–6) outlines appropriate levels of force in response to a target subject's level of resistance. Commanders and soldiers may select a COA from the UFC at any level appropriate to the level of resistance indicated by the subject.

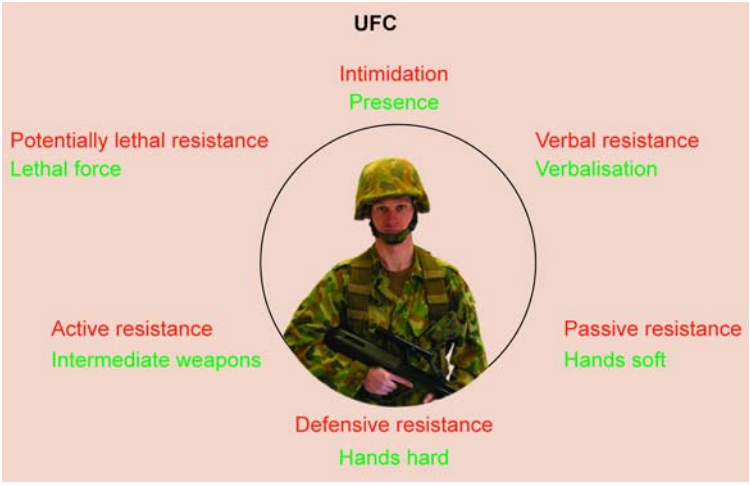


Figure 6–6: Use of Force Continuum

6.56 If control is not achieved with lesser levels of force, the soldier escalates one level of force to the level required to establish control. If, however, control is achieved, the soldier de-escalates the use of force to the level appropriate to the level of resistance encountered. If the lawful objective is achieved the soldier ceases the use of force.

6.57 The levels contained within the UFC and their definitions and examples are described as follows:

a. *Intimidation.* Intimidation is responded to with 'presence', which is the identification of authority enhanced by professional standards of dress and a display of self-confidence in order to establish a psychological

dominance. Examples are openly bearing arms and an authoritative posture.

b. *Verbal Resistance.* Verbal resistance is responded to with 'verbalisation', which comprises verbal skills enhanced by physical actions used to control or de-escalate a situation and achieve voluntary compliance without the need for physical confrontation. This will accompany all levels of the UFC.

c. *Passive Resistance.* Passive resistance is responded to with 'hands soft', which comprises physically subduing a subject without weapons, using techniques that have a very low potential for injury. Examples are blocking, pulling, pushing and escort techniques.

d. *Defensive Resistance.* Defensive resistance is responded to with 'hands hard', which comprises physically subduing a subject without weapons and using techniques that may cause motor dysfunction and surprise. Examples are unarmed impact and pain-compliance take-downs.

e. *Active Resistance.* Active resistance is responded to with 'intermediate weapons', which comprises physically subduing a subject, with or without non-lethal weapons, using techniques intended to neutralise the threat. Examples are oleoresin capsicum spray, batons that target vulnerable but non-vital areas of the body, and taser weapons.

f. *Potentially Lethal Resistance.* Potentially lethal resistance is responded to with lethal force, which comprises physically subduing a subject, with or without lethal weapons, using techniques likely to cause serious harm or death.

WARNING

Lethal force may only be used to protect yourself, or a designated person, from a hostile act or a demonstration of hostile intent. Lethal force may also only be used to protect property if damage or destruction is likely to endanger the lives of personnel or a designated person, and there is no other way to neutralise the threat.

6.58 Soldiers must reasonably believe that the following elements are present before lethal force is used:

a. capability,

b. range,

c. intent, and

d. last resort.

Variables in the Application of Force

6.59 Soldiers must consider the following when selecting a COA from the UFC:

a. subject personal factors (size, sex, age);

b. the ratio of ADF personnel to subject personnel;

c. fitness levels; and

d. skill levels.

Immediate Action

6.60 Crowd control scenarios can generate rapidly and without warning in the urban environment. As a result, all forces operating within this environment need to be conversant with a simple method to deal with such situations. The IA for dealing with an impromptu crowd control situation is as follows:

a. *Anticipate.* All personnel operating within the urban environment must remain vigilant for the signs of crowd build-up and/or hostile intent. If any warning signs are

present, this information should be communicated to the FE commander, who should then commence the next stage of the IA. This information should be rapidly relayed to the element's respective higher HQ as a quick situation report.

b. *Close Up.* Upon anticipating a crowd control scenario, but in the absence of a definite threat to an FE, spacing within the formation should be reduced until each individual is able to more readily provide physical support to the other members of the group if the need arises. The formation should not be changed at this stage, as this could be viewed as an aggressive action and incite the crowd.

c. *Face Up.* If the situation escalates to the point where the commander believes the crowd poses a specific threat, the command 'FACE UP' should be given. On this command, the group should adopt an extended line formation oriented towards the threat, with the commander located slightly to the rear and in control of the line, as illustrated in Figure 6–7. This action should afford the commander time to assess the situation, while the line provides a psychological or physical deterrent to the crowd.

d. *Assess and Act.* The FE commander must assess the action required in accordance with the mission and force protection considerations. If the threat is beyond the capability of the respective FE and a definite risk is posed to friendly forces, the element should withdraw to a safe location.

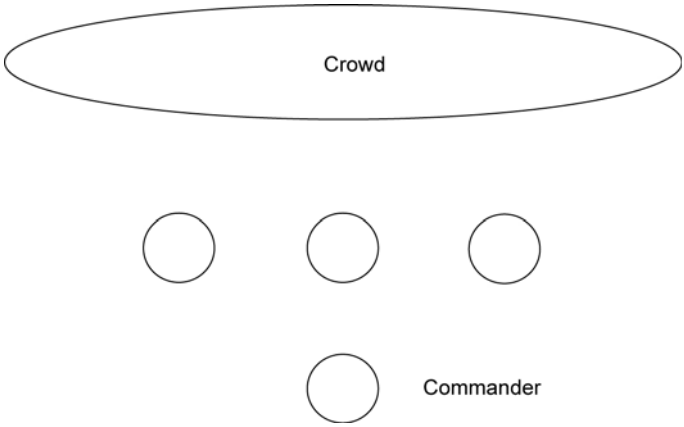


Figure 6–7: Face Up

6.61 General considerations for crowd control include:

a. The element commander should position themself slightly to the rear of the line so that they can retain overall situation awareness and not be drawn into physically dealing with the situation.

b. Where force ratios allow, personnel should be tasked to provide flank and rear security.

c. Where movement is required, simple drill commands can be utilised to provide the appearance of a disciplined and well-trained force.

d. When communication with the crowd is necessary, the commander or the commander's representative should be the only speaker – all other personnel should remain silent unless directed otherwise by their commander or for the execution of a specific drill.

Employment of Vehicles in Crowd Control

6.62 Vehicles, particularly AFV, provide troops involved in crowd control with significant advantages. Some of the roles performed by vehicles are as follows:

a. barriers to filter crowds through,

b. block and channel crowds,

c. screening activities, and

d. vantage points for surveillance.

6.63 Considerations for the employment of vehicles in crowd control are as follows:

a. Vehicles should move slowly in crowds to prevent individuals climbing aboard while also avoiding running over them.

b. Doors and unoccupied apertures such as cargo hatches should be locked.

c. Embus and debus drills must be well practised.

d. Jerry cans of water should be stowed in an accessible position, for drinking, the dousing of burning clothing and the treatment of burns.

e. Horns are used to warn dismounted personnel when vehicles are moving.

6.64 **Vehicle Formations.** Three commonly used vehicle formations are as follows:

a. *Box.* The box formation (see Figure 6–8) suits a soft posture, allowing the street to remain open for use but with vehicles positioned so that they can rapidly react to an increase in tension or an outbreak of violence. If it becomes necessary to close a street, dismounted soldiers move into the area between the vehicles. From this position dismounted troops have the option of reverting to their previous posture, remaining where they are or advancing towards the crowd.

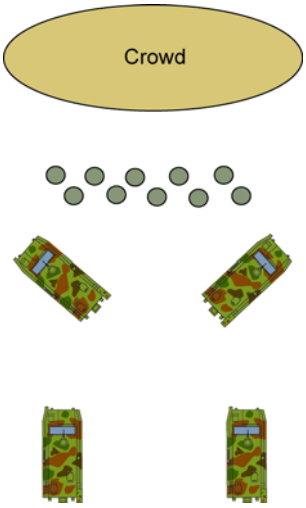


Figure 6–8: Box Formation

b. *Staggered Line.* The staggered line formation (see Figure 6–9) is effective in closing a road. A 2 m gap is left between the forward two vehicles; this gap permits troop deployment through the staggered line if required. This formation provides the dismounted platoon with significant protection from which they can deploy as required.

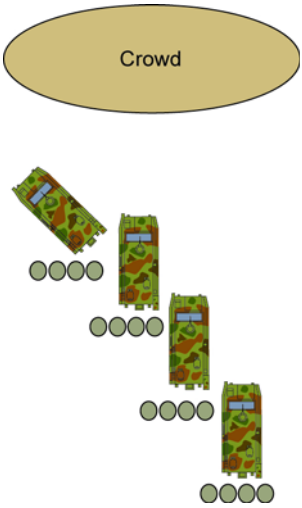


Figure 6–9: Staggered Line

c. *Hard Line.* The hard line formation (see Figure 6–10) should be adopted when the level of crowd violence increases to the point that dismounted troops require significant levels of protection. The formation provides a very effective mobile block for street closure operations. Where the commander feels it is necessary, a close quarter response can be carried out. Close quarter response drills enable dismounted troops to move forward of the protection of the vehicles in a well-rehearsed manoeuvre.

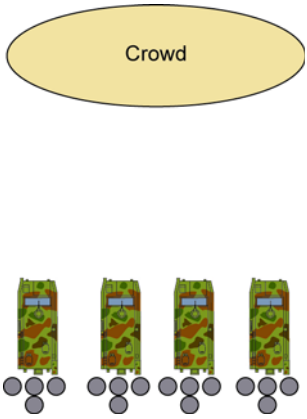


Figure 6–10: Hard Line

CHAPTER 7

BUILDING CLEARANCE

The battle was triggered shortly after 8.00am when a Centurion tank travelling through the village was hit by a rocket-propelled grenade. Initial intelligence suggested there were two Viet Cong platoons in the village. From the strength of the fire met by the company sent to deal with them, however, it was apparent that the enemy presence was much greater. There followed several hours of devastatingly fierce fighting. Twice tanks swept through the village, returning enemy fire by blowing open the walls of the houses. Then each house was cleared room by room by the infantry. By nightfall the village was still not secure and fighting continued in the area the following day. When the battle was finally over the enemy toll was 91 – at a cost of just one Australian life and eight wounded.

The battle of Binh Ba posed the perennial problem of the war in Vietnam – how to separate the enemy from innocent civilians. The occupation of towns and villages by the Viet Cong was a deliberate tactic designed either to ambush the relieving troops or to cause the Australians to use an excess of force.[1]

SECTION 7-1. INTRODUCTION

7.1 While operating in urban environments it will be necessary to enter all rooms and confined spaces to ensure that clearance is carried out effectively to ensure security. It is essential that all drills, including room assault and clearance, are both practised and rehearsed at all levels. This chapter outlines techniques used in building clearance by FT and covers the following:

a. the fundamentals of building clearance,

1. Rowe, J., 1987, *Vietnam: the Australian Experience*, 1987, p. 122.

b. team configurations,

c. room entry and clearance,

d. hallway and staircase drills, and

e. the interior search.

SECTION 7-2. FUNDAMENTALS

Terminology

7.2 It is important to understand elementary terminology to ensure successful clearance. The terminology used is as follows:

a. *Fire Team.* This is the term used to describe any number of personnel used to assault, dominate and/or clear a room or a building.

b. *Point of Entry.* This is a breach or opening that has been made in which soldiers intend to pass through in order to assault.

c. *Fatal Funnel.* This refers to the area immediately surrounding the POE into a room or space which is the focal point of attention for the enemy (see Figure 7–1).

d. *Immediate Threat.* Any enemy within the room who pose an immediate danger to the FT on entering are described as an IT.

e. *Point of Domination.* This is a position within a room or space that dominates that area by cover or fire.

f. *Arc of Clearance.* This refers to an arc within a room or space which an individual member of the FT adopts upon entry and upon the arrival at their point of domination.

g. *Red Zone.* Any area within a room or space that poses a danger or threat and is not yet covered by a weapon system is described as a red zone (RZ).

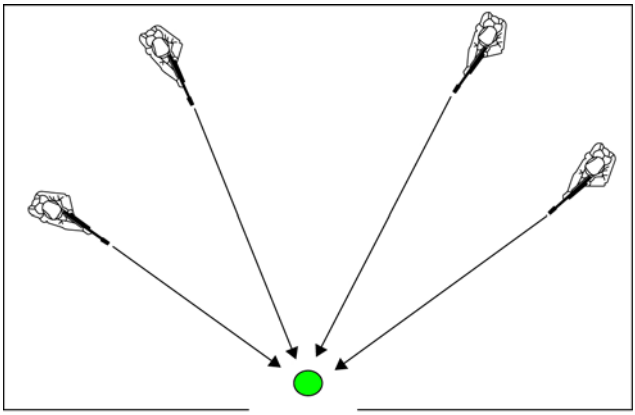


Figure 7–1: Fatal Funnel

Principles of Room Assault

7.3 The principles of room assault are as follows:

a. *Teamwork.* Irrespective of the number of personnel within the FT, all soldiers should ensure that coverage of arcs is conducted. This ensures that all-round protection is afforded to the team at all times. Teamwork can only be achieved with a minimum of two personnel.

b. *Surprise.* Surprise, above everything else, is the key to the assault. The element of surprise ensures that the FT has the advantage of preparedness prior to room entry. Not only does this benefit the FT, but also it startles the enemy and throws them off guard.

c. *Speed.* Speed in room combat is of paramount importance; however, the speed should not be so fast that it detracts from the standard of clearance. A good definition of the speed required is 'a careful hurry'. The ability to accurately engage targets should never be sacrificed for speed.

d. *Momentum.* It is vitally important that the assault does not lose momentum. If the assault is slowed or stopped, it will give the defenders time to reorganise, and this may cause the FT to take casualties.

e. *Flexibility.* All team members should be prepared for changes to the rehearsed plan, for example, when the internal layout of the room may differ from what was expected, or a greater number of enemy or unexpected obstacles are encountered. The team must be flexible enough to change plans quickly and continue with the mission.

f. *Firepower.* During the assault the attack principle of firepower must be maintained at all times to ensure that the FT has the conditions set for success. Planning for the coordination of fire is important, as C2 will be difficult within the urban environment. Consideration should be made to the supporting elements that can be used in depth and aid with the deception.

g. *Controlled Aggression.* Controlled aggression can be described as a sudden and explosive force that eliminates the threat with the least chance of compromise. When this is coupled with speed, it enables the FT to maintain their element of surprise, thereby preventing opposing forces from delivering any coordinated or planned reaction. Controlled aggression is not limited merely to massive firepower; it also includes a mental condition or mindset. The flash of a fixed bayonet is a great multiplier in achieving this condition. It is the only secondary weapon available to soldiers in most cases.

Fundamentals of Room Clearing

7.4 The 10 defined fundamentals of room clearing address the actions soldiers take while moving along confined corridors to the room to be cleared, while preparing to enter the room,

during room entry and target engagement, and after contact. Team members are to adhere to the following:

a. Move tactically and silently while securing the corridors to the room to be cleared.

b. Carry only the minimum amount of equipment (the carriage of packs and loose items tires soldiers, slows their pace and causes noise).

c. Arrive undetected at the entry to the room in the correct order of entrance, prepared to enter on a single command.

d. Enter quickly and dominate the room, then move immediately to positions that allow complete control of the room and provide unobstructed fields of fire.

e. Eliminate all enemy in the room by fast, accurate and discriminating fire.

f. Gain and maintain immediate control of the situation and all personnel in the room.

g. Confirm whether enemy casualties are wounded or dead; disarm, segregate and treat the wounded; and search all enemy casualties.

h. Perform a cursory search of the room and determine whether a detailed search is required.

i. Mark the room as cleared using a simple, clearly identifiable marking in accordance with the unit SOP.

j. Maintain security and be prepared to react to more enemy contact at any moment, and be particularly attentive to rear security.

SECTION 7-3. TEAM CONFIGURATION

Size

7.5 The size of FT will depend upon the room or space size and the available assault members. The most basic assault element

comprises two soldiers. However, where possible the standard four-man FT should be used, as this number gives commanders the most flexibility during room or space clearance. The four-man FT drill is the basis for all training, and all other drills are based upon this element.

7.6 An essential and additional member of each team is the 'breacher', the soldier allocated the equipment and/or explosives to conduct the breach of a room or space.

Restrictions

7.7 The size and shape of the room, it's layout (doors, windows, etc.) and any obstacles will restrict the size of the assault group and may limit tactical action and the use of weapon systems. Building construction characteristics may limit the utility of weapons. The use of explosives may cause building collapse and lead to friendly casualties. In other instances, the effectiveness of small arms may be reduced due to a lack of round penetration.

Configuration

7.8 Team configurations, including the advantages and disadvantages, are described as follows:

a. *Two-man Team.* The two-man team offers simplicity and achieves the basic principle of teamwork. It would normally be used to clear small rooms or areas that are not large enough for a larger FT to enter. The advantages and disadvantages of the two-man team include:

(1) advantages:

(a) it allows small areas to be cleared quickly,

(b) it ensures that building clearance is complete, and

(c) the team still maintains the ability to continue to carry out fire and manoeuvre; and

(2) disadvantages:

(a) firepower is limited if the team is taken by surprise;

(b) C2 can be lost within large buildings;

(c) multiple two-man teams can very quickly become separated;

(d) no redundancy is possible (a team member cannot be left alone); and

(e) the exploitation distance is limited.

b. *Three-man Team.* The three-man team forms the basis for the FT using a grouping from the rifle section. It allows for larger rooms and ensures that depth and security is maintained within the teams. The advantages and disadvantages of a three-man team include:

(1) advantages:

(a) it allows full rooms areas to be cleared quickly;

(b) it provides depth to the FT;

(c) it provides an additional covering fire capacity, especially when two soldiers must both work on a task such as opening a door;

(d) it ensures that building clearance is complete;

(e) the team still maintains the ability to continue to carry out fire and manoeuvre;

(f) regrouping is not necessary from the three-man team section format; and

(g) the team can complete a task with two soldiers if a casualty occurs; and

(2) disadvantages:

(a) firepower is limited if the team is taken by surprise,

(b) rooms may take longer to clear if they are full of furniture,

(c) rooms within rooms may be difficult to clear due to only one 'cover man' being available, and

(d) C2 can be lost within large buildings.

c. *Four-man Team.* A 'four-man FT' is a single group that assaults together, as opposed to an FT comprising two teams of two. The four-man team has an integral link to the rear, the reserve capacity and the capability to dominate larger areas; however, it can be clumsy in small spaces. The advantages and disadvantages of the four-man team include:

(1) advantages:

(a) it allows full rooms areas to be cleared quickly;

(b) it provides depth to the FT;

(c) it provides an additional covering fire capacity, especially when two soldiers must both work on a task such as opening a door;

(d) the team still maintains the ability to continue to carry out fire and manoeuvre;

(e) the team can complete a task with three soldiers if a casualty occurs;

(f) it ensures that building clearance is complete; and

(g) it provides flexibility to commanders during the clearance stage of the room assault; and

(2) disadvantages:

(a) regrouping will be necessary from the three-man team section format, and

(b) a four-man team may be too large for some rooms or spaces.

d. *Eight-man Team.* Eight-man teams offer additional security. The drills are based on a two- to four-man team entering a room while the remaining team members maintain domination and security of the adjoining hallway. The fundamentals of the drill(s) do not change, regardless of whether two-, four- or eight-man teams are used. This team would be used for large rooms which may be difficult to dominate using three- or four-man teams. The advantages and disadvantages of the eight-man team include:

(1) advantages:

(a) it allows large areas to be cleared quickly,

(b) it ensures that building clearance is complete, and

(c) the team has superior firepower and also maintains the ability to continue to carry out fire and manoeuvre; and

(2) disadvantages:

(a) it is manpower intensive,

(b) C2 can be difficult, and

(c) extensive drill rehearsal and training is required to ensure that each soldier knows their position and arcs of fire.

SECTION 7-4. ROOM ENTRY

7.9 The entire team enters the room as quickly and smoothly as possible and clears the doorway immediately. If possible, team

members move from a covered or concealed position already in their entry order. Ideally, the team arrives and passes through the entry point without having to stop.

7.10 The door is the focal point of anyone in the room. It is known as the fatal funnel (FF) (see Figure 7–1), because it focuses attention at the precise point where the individual team members are the most vulnerable. Moving into the room quickly reduces the likelihood of anyone being hit by enemy fire directed at the doorway.

7.11 On the signal to go, the clearing team moves quickly from covered or concealed positions through the door and takes up positions inside the room that allow it to completely dominate the room and eliminate the threat. Team members stop movement only after they have cleared the door and reached their designated point of domination. The first soldier's position is deep into the near corner of the room. The depth of the first soldier's movement is determined by the size of the room, any obstacles in the room such as furniture, and the number and location of enemy and noncombatants in the room.

7.12 To make precision room-clearing techniques work, each member of the team must know their sector of fire and how their sector overlaps and links with the sectors of the other team members. Team members do not move to the point of domination and then engage their targets; they engage targets as they move to their designated point. However, engagements must not slow movement to their points of domination. Team members may shoot from as short a range as 2 to 3 cm. They engage the most immediate enemy threats first. Examples of IT are enemy personnel to whom the following applies:

a. they are armed and prepared to return fire immediately,

b. they block movement to the position of domination,

c. they are within arm's reach of a clearing team member, and

d. they are within 1 to 2 m of the breach point.

7.13 Each clearing team member initially has a designated sector of fire unique to them, and this expands to overlap other team members' sectors. The following drills are those that would be conducted by a four-man team (if a smaller team is used, unmanned sectors must be absorbed by the entry team members):

a. The No. 1 and No. 2 soldiers are initially concerned with the area directly to their front, then along the wall on either side of the door or entry point. This area is in their path of movement and their primary sector of fire. Their alternate sector of fire is from the wall they are moving toward, back to the opposite far corner.

b. The No. 3 and No. 4 soldiers start at the centre of the wall opposite their POE and clear to the left if moving toward the left, or to the right if moving toward the right. They stop short of their respective team member (either the No. 1 or the No. 2).

7.14 The team members move toward their points of domination, engaging all targets in their sector. Team members must exercise fire control and discriminate between hostile and noncombatant room occupants. Shooting is conducted without stopping, using reflexive shooting techniques. Because the soldiers are moving and shooting at the same time, they must move using careful hurry. These techniques are illustrated later in the chapter, showing the separate methods depending on door positions.

SECTION 7-5. ROOM CLEARANCE

Verbal Orders

7.15 FT will need to develop SOP hand signals, based on existing signals, for the successful execution of the clearance drills within the urban environment. Verbal and non-verbal orders are used by the FT to indicate actions to be carried out. The following are some common verbal orders:

a. 'COVERING' – cover the threat;

b. ‘COVER ME’ – cover me while traversing an area of risk;

c. ‘READY’ – a precautionary command meaning ready to move/go;

d. ‘MOVE/GO’ – move/go;

e. ‘STOP’ – stand still;

f. ‘FOLLOW ME’ – follow me;

g. ‘CLEAR’ – the room or objective is clear;

h. ‘COMING OUT/IN’ – a warning of friendly movement, for example, into or out of a room;

i. ‘COMING UP/COMING DOWN’ – a warning of friendly movement up or down stairs;

j. ‘GRENADE’ and ‘FLASH’ – a warning of a grenade(s) and/or flash in the immediate area;

k. ‘STOPPAGE’ – a weapon stoppage;

l. ‘MAN DOWN’ – a casualty; and

m. ‘FIGHT BACK’ – a second more detailed or comprehensive clearance of a room that may have been reoccupied by the enemy.

Systematic Clearance

7.16 Clearance Pattern and Sequence. The pattern and sequence of clearance of a building will depend upon the following factors:

a. the pattern of room layout in the building, including corridors and the location of doors;

b. the strength of the walls, floors and ceilings in relation to the available weapons, tools and explosives, which will govern which points can be used for initial entry or subsequent clearance;

c. the supporting fire available within the building during the assault and its likely effects on walls (eg, local collapse), and hazard to own troops; and

d. the levels of the building at which entry may be gained.

7.17 A building is usually cleared one floor at a time, ideally from top to bottom. However, circumstances often mean that clearance must be conducted from bottom to top. A systematic approach maintains control and reduces the chance that friendly fire will cause own casualties through floors or ceilings. In buildings with solid floors, several levels may be cleared simultaneously, but only with numerous well-trained troops. One group must be dedicated to each level.

7.18 Building clearance may be conducted using one of the following methods:

a. *Unplanned Assault.* Unplanned assault clearance is common in private housing, where floor plans are unpredictable and the interior layout is not known. The major disadvantage is the difficulty in providing safe intimate fire support.

b. *Rotating.* Rotating clearance describes a pattern that moves in any designated direction. The outside wall is used for constant checks on orientation. Control and coordination of fire onto the building is easier, because the direction of movement is known.

c. *Centre Outwards.* Clearing from the centre outwards utilises a core or solid-walled corridor as a base. The FT will return to this core after each room is cleared. This method is sometimes dictated by box wall construction and requires a strong initial FT to gain and secure a foothold that dominates the building core or corridor, preventing enemy redeployment.

d. *Parallel.* In larger buildings and where walls are easily breached, two or more FT can sweep down a building parallel with one another. This technique speeds clearance and makes the best use of fire support from the flanks. Tight control needs to be maintained over the rate of advance and the direction of fire.

e. *Simultaneous Multiple Entry.* The simultaneous multiple entry of a building can achieve surprise and thus aid rapid clearance. Each FT must be allocated a clearly defined zone beyond which there is no movement or firing. Obviously, the method depends upon the ability to enter at a number of points around the building. For these reasons, the technique tends to be used for deliberate attacks where the building layout is known, the interior walls are solid and the assault can be rehearsed. The opportunity to use a number of entries around a building is enhanced by the availability of AFV to provide protection during the entry. This technique will be more common when restrictions are placed on supporting fire but there remains a need to protect the assaulting troops. There are several aids to coordination:

(1) *Building Identification.* A standardised system of building identification is the first prerequisite in successful coordination of fire support.

(2) *Route Specification.* The commander specifies the precise routes to be used by each sub-unit or team.

(3) *Specified Bounds.* The limits of movement are clearly defined.

(4) *Marking Progress.* Troops must mark the progress of the assault and clearance as it proceeds. This will usually involve displaying signs. Panels, flags, lamps or objects such as furniture or fittings may be hung out of windows. These should be changed or varied regularly to prevent enemy replication.

Sequence of Room Assault

7.19 Room clearing/assault involves rapidly and methodically seizing control of a room, or multiple rooms, and all of its inhabitants (both hostile and other) by eliminating the threat, dominating the room and controlling the situation. The

sequence for a room assault is broken down into four main stages, as follows:

a. Stage 1 – preparation and breach;

b. Stage 2 – room or space entry;

c. Stage 3 – room or space exploitation; and

d. Stage 4 – clearance and room reorganisation.

Stage 1 – Preparation and Breach

7.20 The room assault will require the pre-positioning of the FT and C2 elements to ensure that the stages of the room assault flow and to achieve the desired outcome.

7.21 **Pre-position.** The object of pre-positioning is to place the FT members at start positions where their weapon systems can best be employed. Exposure in this position should be minimised and the entry made as rapidly as possible. Soldiers must be trained to maintain muzzle awareness at all times. Muzzles are not to point at soldiers; weapons must be carried at a low or high carry. The start position for the room assault will often be in cover in order to avoid exposure or early detection by the enemy. The tactical situation will dictate the positioning of the soldiers before the next assault takes place.

7.22 Before pre-positioning themselves, the team members confirm that they have full magazines on their weapons and sufficient grenades to complete the possible neutralisation of the threat inside the next room. The No. 2 within the FT would normally employ the grenade. The team members agree by signal or voice the method by which they will enter the next room or space. The No. 1 will inspect the locks and opening mechanisms and, where possible, test them to ensure that they are likely to open. If there is reason to doubt that a door will open easily, one of the following steps is prepared:

a. a hammer or other tool is readied for use,

b. a personal weapon is aimed at the lock, or

c. a breacher is signalled to position a breaching device.

7.23 Passage of Ready Signal. There are many different ways to pass the signal that everyone is ready. If a stealthy approach to the objective room or space is possible, the 'squeeze up' technique works well. It is conducted as follows:

a. The No. 1 or lead soldier assumes a position covering the entry point. Their eyes and weapon are oriented on the entry point. The commander will make the decision on how many team members will assault the room or space (in this example, a team of four is to be employed). Upon the arrival of the remaining team members at the assault position, it is important that the No. 1 is not touched until all members of the FT are ready and in position.

b. Once the remaining team members are in position and ready to assault, the No. 4 or last soldier moves forward and places a hand firmly on the No. 3's shoulder and squeezes, the No. 3 repeats this action with the No. 2, and the No. 2 repeats the action with the No. 1. When the No. 1 feels this signal, they know that they can start the sequence for the assault of the room or space. In conjunction with this method, a countdown method, which is very effective when using coordinated fire to achieve suppression may be employed, for example:

(1) 'FIVE' (the assault starts on five);

(2) 'FOUR' (no action);

(3) 'THREE' (no action);

(4) 'TWO' (coordinated fire commences, if employed); and

(5) 'ONE' (the breach/entry is executed).

7.24 The following types of access may be used for a room assault:

a. *Window and Ceiling Breaches.* The positions for entry through a window or ceiling breach are dictated by the access aids to be used. Soldiers will group on one side

to use a single access aid or for manual assistance with the entry.

b. *Floor Breach.* To use a floor breach in an assault to a lower level, the team will be close to the hole, holding their ropes or other aids in a controlled descent. If the floor is penetrable by enemy fire they will, however, stay well back until neutralisation is completed.

c. *Closed Doors.* The ideal positioning for closed doors depends upon whether they open inward or outward from the attackers.

d. *Fully Open Door, Breach in Wall or Closed Door.* For a fully open door, breach in the walls or closed door the ideal positioning is at least one soldier on each side of the aperture to provide for maximum observation of the interior space at the moment of entry. A simultaneous entry through the opening is preferable, with each soldier moving in their respective direction while scanning and clearing their arc of responsibility with their weapon(s). If teams are larger than two-man, other members cover through the access aperture from previous positions. An open doorway or breach should never be crossed during pre-positioning. In this case, the position for an inward- or outward-opening door should be employed.

e. *Path of Least Resistance.* The FT should, whenever possible, line up on the side of the door that provides the path of least resistance upon entering. The swinging door is an obstacle that can best be avoided by lining up on the correct side.

f. *Inward-opening Door.* If the door opens away from the team member, ideally at least one soldier is positioned on each side to obtain minimum coverage of the interior space during entry, as shown in Figure 7–2.

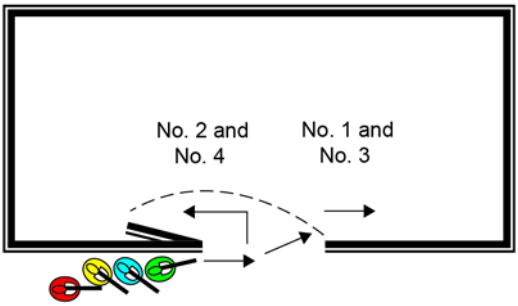


Figure 7–2: Inward-opening Door

g. *Outward-opening Door.* If the door opens towards the team members, it will tend to block the path from the area behind the hinge; so ideally two soldiers should position themselves on the lock side. The nearest will operate the door and block it after the grenade is thrown in, as shown in Figure 7–3.

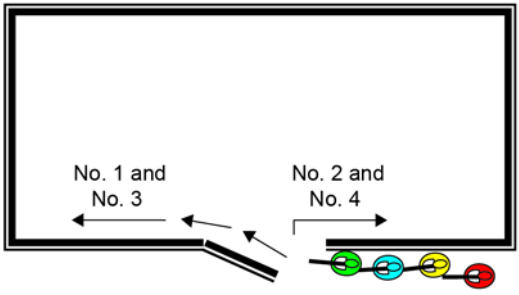


Figure 7–3: Outward-opening Door

h. *Explosive Opening.* When an explosive breach is used, the assaulting team must use all available cover to ensure protection for the team. This may include moving into a secondary room to ensure that the correct hard cover is employed. The FT members conducting the

breach will move forward while the remainder remain in cover. The actual location of these start positions will depend on cover but should allow for rapid follow-up after a successful breach detonation.

7.25 Use of Grenades on Entry. The room to be cleared is neutralised by throwing one or more grenades into the area, depending upon its size and shape and whether an explosive entry has been employed using a breach charge. The aim of throwing more than one grenade is to ensure that the whole area is covered by blast and fragmentation. The following should be noted:

a. When a grenade is employed for the clearance of an enemy-held room or space, consideration must be given to the time delay imposed by the fuze of the grenade. This time delay may well allow the enemy the opportunity to retrieve the thrown grenade and re-employ it against friendly troops.

b. When throwing a grenade through an outward-opening door, in order to reduce the risk of exposure to enemy fire and the chance of the thrown grenade returning through the doorway, a length of rope should be attached to the door to allow for the door to be pushed ajar for long enough to throw the grenade, then pulled shut. Outward-opening doors can also be held shut with a boot, jammed into position so as to expose only the foot.

Stage 2 – Room or Space Entry

7.26 Actions Upon Entry. The actions soldiers will execute upon entering a room are as follows:

a. *Clear the Point of Entry or Breach Point (Fatal Funnel).* The area surrounding the door threshold is known as the FF. Any soldiers entering the room are to clear this area immediately, as it is likely to be the focal point for any threat forces' weapons. By moving quickly, the FT members reduce the risk of being hit by hostile fire directed at the POE.

b. *Engage Immediate Threat.* The next step is to engage any IT encountered. The following criteria define an IT:

(1) Any threat that blocks the movement of the soldier to their point of domination is an IT.

(2) Any hostile target that is too close to be ignored is an IT. Although this factor is vague, the decision as to what is too close is that of the individual soldier. As a general guideline, of what is too close is whatever is within arm's reach.

(3) A soldier must never turn completely around to engage a target. Once they have passed a target, they must move on and not change their mind.

(4) The engagement of a perceived IT cannot slow down the soldier's movement. If the soldier has to slow down to aim, the target is not an IT. Slowing down will also endanger the team as a whole by blocking them in the doorway and violating the principle of speed and the fundamental of dominating the room.

(5) If an IT is identified, it may be necessary to fire on the move in order to clear the doorway and complete Stage 2 of the entry drill.

c. *Weapon Stoppage.* If a member of the FT has a weapon malfunction, that soldier should shout 'STOPPAGE', adopt the kneeling position, conduct the IA and work through the malfunction. The closest team member will take up that soldier's scan and arc of fire. This works because all arcs of fire are interlocking, thereby providing redundant firepower. The soldier should not stand up until the closest team member moves to them and guides them to their feet. At this stage they resume their position and responsibilities within the team.

d. *Clear Arc of Fire.* Every soldier has an arc of fire when conducting the entry and moving to the point of

domination. This arc of fire must be scanned at all times from the POE to the point of domination.

7.27 Individual Actions. Each member of a team is allocated a number and has specific tasks within the assault on a room or space. Prior to the entry of any room or space, the assault commander must ensure that all the members of the team or teams are prepared and have the correct equipment and ammunition to complete their tasks. The pre-assault position at the entry point may take the form of all four soldiers on the same side of the door (see Figure 7–4[a]) or two soldiers on each side of the door (see Figure 7–4[b]). On detonation of the entry device, the FT will move into the room. The sequence shown in Figure 7–4 illustrates the actions of a four-man FT. These actions can be modified to accommodate two-man, three-man or six-man FT.

a.

b.

Figure 7–4: Four-man Entry

7.28 Team Numbering. The sequence of team numbering is illustrated in Figure 7–5 to Figure 7–8, beginning with the actions of the No. 1 and continuing to those of the No. 4.

7.29 No. 1. The No. 1 enters the door or opening and moves in the direction of least resistance, either left or right, as shown in Figure 7–5. On entry, they eliminate any IT encountered while moving to their Stage 2 position. They move approximately four steps into the room or space, maintaining a distance of 400 mm from the wall. Their main area of concern is the closest corner, depending on whether they have moved to the left or the right. This area must be cleared before taking up their Stage 2 position. On completion of their four steps, they adopt a stable standing fire position, cover their arc of fire and collapse their arc towards the centre of the room, in this example from left to right. They are not to point their weapon within 1 m of another team member. On arrival at their Stage 2 position and once they have collapsed their arc, they report in a loud voice any RZ identified within their arc.

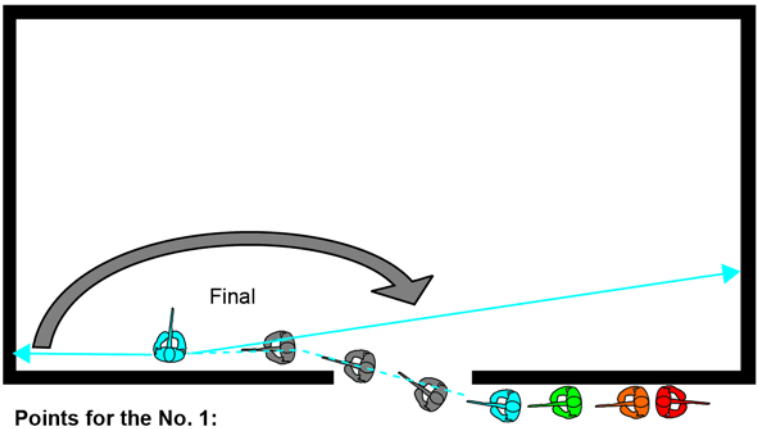

Final
Points for the No. 1:
1. Make entry first.
2. Clear the IT.
3. Follow the path of least resistance.
4. Clear the closest corner.
5. Move four steps along the wall.
6. Maintain a distance of 400 mm from the wall.
7. Collapse the final arc of fire from left to right.
8. Report any RZ.

Figure 7–5: No. 1 Actions – Centre Door

7.30 **No. 2.** The No. 2 enters the door or opening and moves in the opposite direction from the No. 1, either left or right, as shown in Figure 7–6. On entry, they eliminate any IT encountered while moving to their Stage 2 position. They move approximately four steps into the room or space maintaining a distance of 400 mm from the wall. Their main area of concern is the closest corner, depending on whether they have moved to the left or the right. This area must be cleared before they take up their Stage 2 position. On completion of their four steps, they adopt a stable standing fire position, cover their arc of fire and collapse their arc towards the centre of the room, in this example from right to left. They are not to point their weapon within 1 m of another team member. On arrival at their

Stage 2 position and once they have collapsed their arc, they report in a loud voice any RZ, identified within their arc.

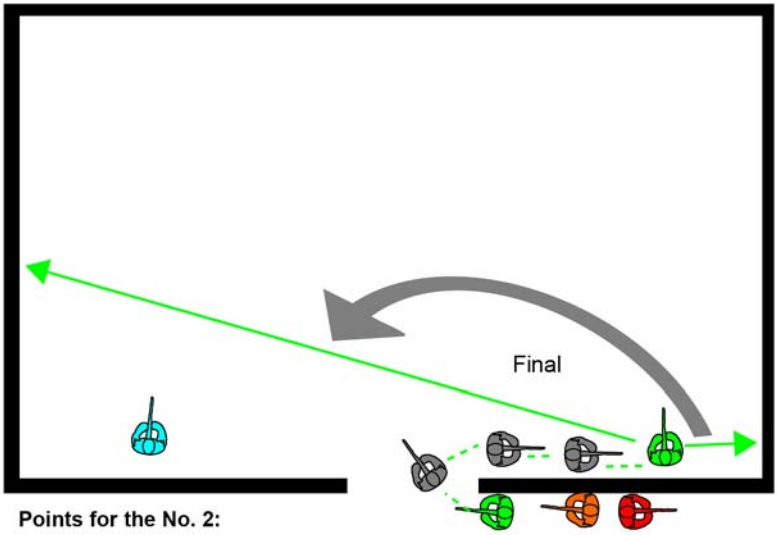
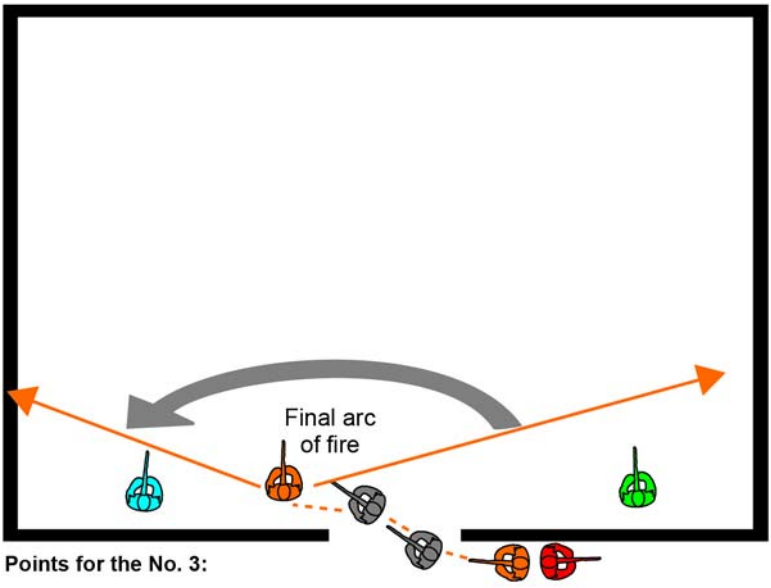

Final
Points for the No. 2:
1. Make entry second, in the opposite direction from the No. 1.
2. Clear the IT.
3. Follow the path of least resistance.
4. Clear the closest corner.
5. Move four steps along the wall.
6. Maintain a distance of 400 mm from the wall.
7. Collapse the final arc of fire from left to right.
8. Report any RZ.

Figure 7–6: No. 2 Actions – Centre Door

7.31 **No. 3.** The No. 3 enters the door or opening and moves in the opposite direction from the No. 2, either left or right, as shown in Figure 7–7. On entry, they eliminate any IT encountered while moving to their Stage 2 position. They move a minimum of two steps into the room or space, maintaining a distance of 400 mm from the wall. It is essential that they fully clear the opening or doorway and are outside the FF. Upon completion of their two steps, they adopt a stable standing firing position,

cover their arc of fire and collapse their arc towards the wall of the room, in this example from right to left. They are not to point their weapon within 1 m of another team member. On arrival at their Stage 2 position and once they have collapsed their arc, they report in a loud voice any RZ identified within their arc.



Points for the No. 3:

1. Make entry third, in the opposite direction from the No. 2.
2. Clear the IT.
3. Follow the path of least resistance.
4. Clear the closest corner.
5. Move two steps along the wall.
6. Maintain a distance of 400 mm from the wall.
7. Collapse the final arc of fire from left to right.
8. Report any RZ.

Figure 7–7: No. 3 Actions – Centre Door

7.32 **No. 4.** The No. 4 enters the door or opening and moves in the opposite direction from the No. 3, either left or right, as shown in Figure 7–8. On entry, they eliminate any IT encountered while moving to their Stage 2 position. They move a minimum

of two steps into the room or space, maintaining a distance of 400 mm from the wall. It is essential that they fully clear the opening or doorway and are outside the FF. On completion of their two steps, they adopt a stable standing fire position, cover their arc of fire and collapse their arc towards the wall of the room, in this example from left to right. They are not to point their weapon within 1 m of another team member. On arrival at their Stage 2 position and once they have collapsed their arc, they report in a loud voice any RZ identified within their arc. On the completion of Stage 2 by the whole FT, the commander will task individuals to commence Stage 3 and clear the RZ or exploit the room or space.

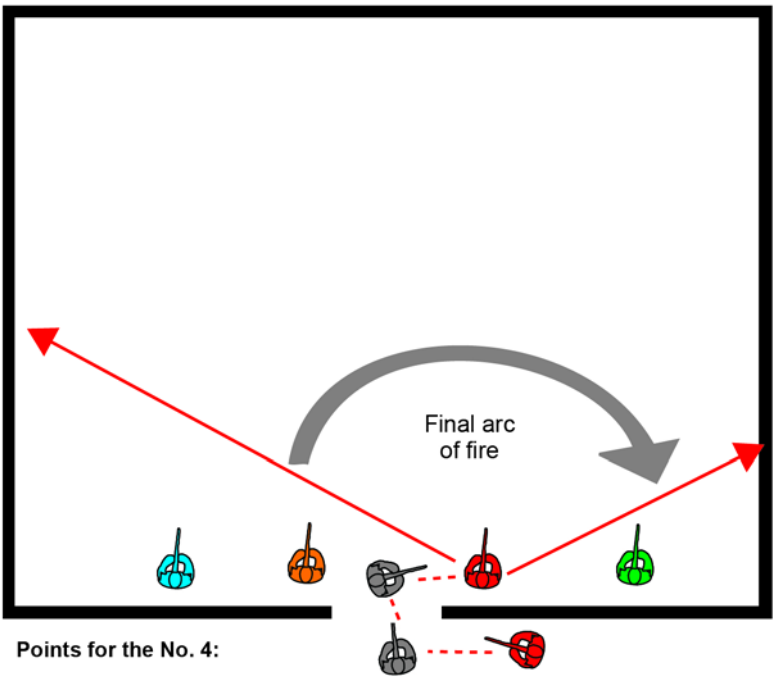

Final arc
of fire
Points for the No. 4:
1. Make entry fourth, in the opposite direction from the No. 3.
2. Clear the IT.
3. Follow the path of least resistance.
4. Clear the closest corner.
5. Move two steps along the wall.
6. Maintain a distance of 400 mm from the wall.
7. Collapse the final arc of fire from left to right.
8. Report any RZ.

Figure 7–8: No. 4 Actions – Centre Door

7.33 At the conclusion of Stage 2, the four-man team will have all arcs of fire covered, as shown in Figure 7–9.

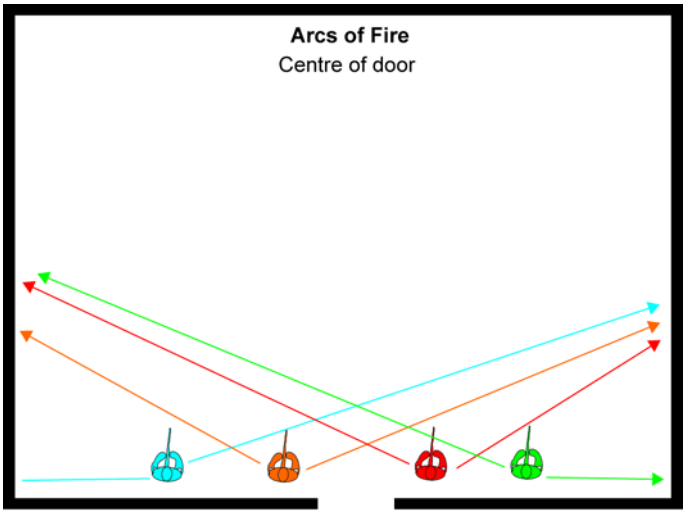


Figure 7–9: Interlocking Arcs of Fire

7.34 Corner Entry Drills. Figure 7–10 to Figure 7–13 provide examples of the drills for entering a room with a door positioned on a corner.

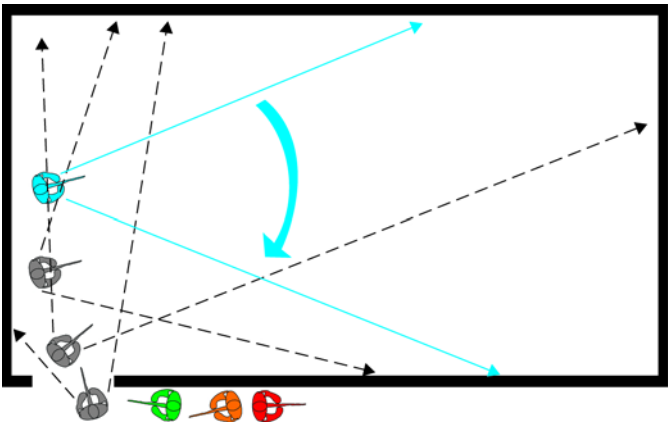


Figure 7–10: No. 1 Actions – Corner Door

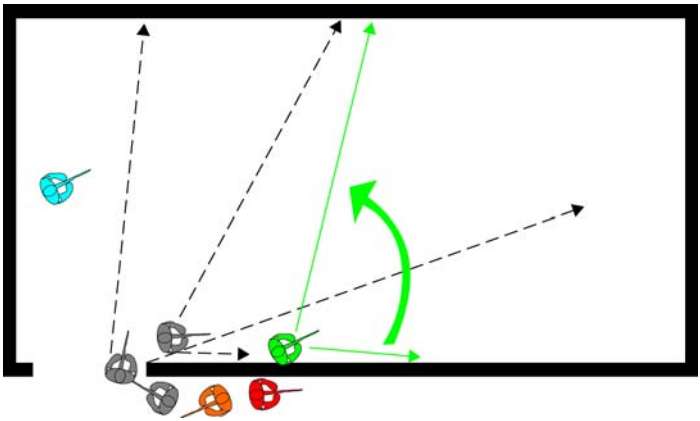


Figure 7–11: No. 2 Actions – Corner Door

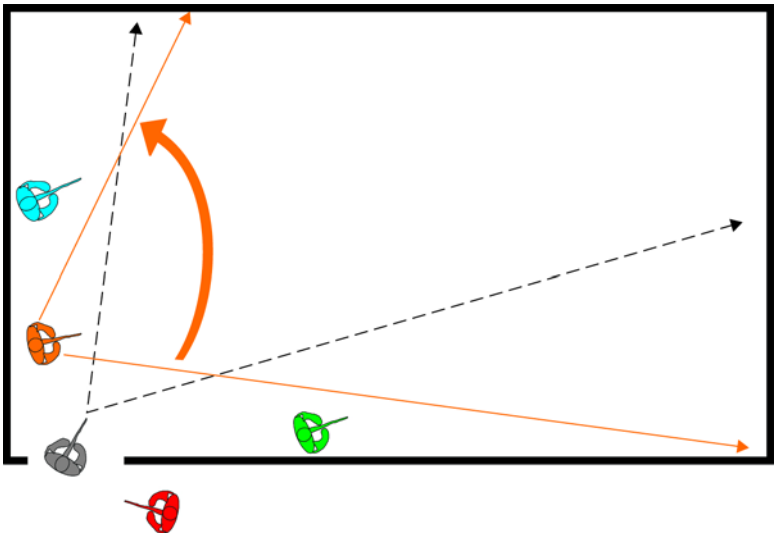


Figure 7–12: No. 3 Actions – Corner Door

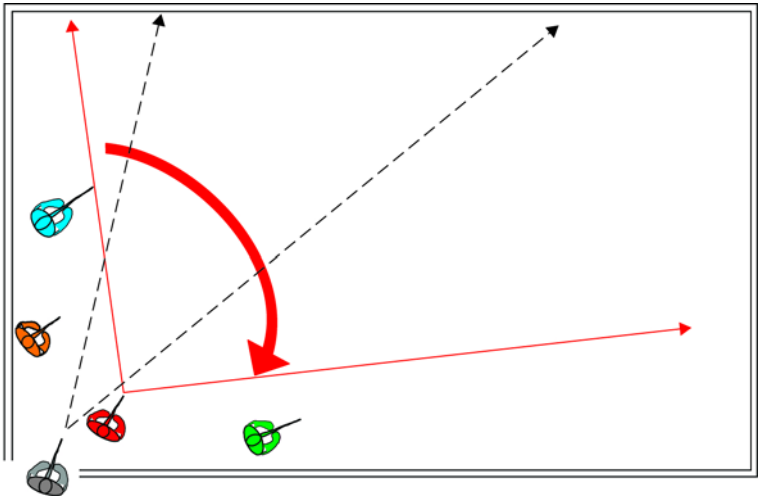


Figure 7–13: No. 4 Actions – Corner Door

7.35 At the conclusion of Stage 2, a four-man team will have all arcs covered for a corner door, as shown in Figure 7–14.

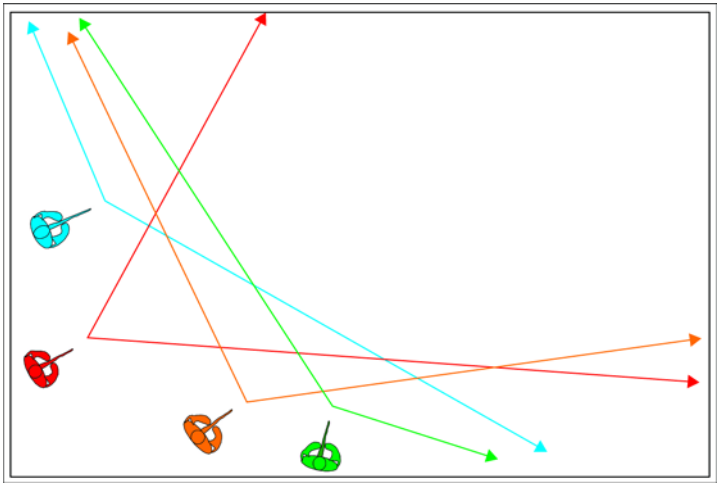


Figure 7–14: Interlocking Arcs of Fire – Corner Door

7.36 **Enter.** As soon as the last grenade or breach charge has exploded, the team members enter the room or space at controlled speed, as shown in Figure 7–5 to Figure 7–14. This procedure will depend upon the IT and the items of furniture or other blockages within the room. The FT engages any enemy or likely enemy positions, remaining low to get beneath the grenade's residual smoke. The action that the FT takes is to clear the immediate corners to the left and right. The No. 1 and the No. 2 are initially responsible for the corners, but if they are unable to clear the corners due to enemy engagement or to their becoming a casualty, the No. 3 and the No. 4 must assume this critical responsibility. If no enemy is apparent, they briefly pause in their Stage 2 positions, observing for movement or reaction from inside or outside the immediate vicinity. It is imperative that all team members maintain aggressive movement in order to clear the FF and thereby arrive safely at their Stage 2 positions.

7.37 **Reporting.** As each team member enters the room or space, and has cleared and arrived at their Stage 2 positions, they must report any RZ to the commander. These are areas within a room which are identified as having possible threats or areas which cannot be fully seen. For example, any open doorway, or a recess that cannot be seen, would be classified as an RZ. If no RZ are apparent, the team member remains quiet and in position for the commander to make the tactical decision to move the team to the dominant points within the room or space. If the room or space is clear and can be dominated from the Stage 2 positions, Stage 3 (exploitation) may not be necessary and the commander can move to Stage 4 (clearance and reorganisation). In the early stages of training and until the team members become proficient with the drills, commanders may wish to have the team members report when all members are within the room and ready to move onto Stage 3 of the drill to aid with C2. This reporting should be carried out in reverse order, that is, from the No. 4 through to the No. 1. Some of the words of command used could be 'NUMBER FOUR READY', 'NUMBER THREE READY' and so on until all the team has reported ready.

7.38 **Dominate.** It may be necessary to move from the Stage 2 position to finally reach a point of domination within a room or space; this action should be carried out in pairs, using cover from the second pair at all times. Any identified RZ must also be covered by the remaining team members.

Stage 3 – Room or Space Exploitation

7.39 Corners, or any other point where a firer can cover their entire arc, are generally considered to be the points of domination in any room. Being able to exploit to this point will be dictated by the tactical situation and items of furniture or other blockages within the space. The team commander directs the team members allocated to move to these points; this should be carried out in pairs. During this action, the remaining team members must maintain cover of the RZ. The members moving must ensure that they stay away from windows and open doorways, as these areas may be covered by enemy fire. Once

each member on the team has reached their point of domination, they ensure that they have interlocking arcs of fire with the remaining team members.

Stage 4 – Clearance and Room Reorganisation

7.40 Clearance. Depending on the amount of cover in the room or space, it may be necessary to check for hidden enemy or signs of enemy. The commander nominates a pair to exploit to an area within the room or space. The member of the moving pair who is conducting the search or clearance will be covered by their partner at all times. The team member conducting the search checks furniture, moving it to check for hidden routes if appropriate. Any wounded enemy, prisoners and civilians should be forced to the floor until further support is available. If there are any further doors in the room, these must be covered by the remaining members of the FT. All team members must, when clearing the room, be aware of the open windows and doors, as these areas may well be covered by enemy fire.

7.41 Room Reorganisation. Once the room or space has been cleared and the area secured, the commander reports 'ROOM CLEAR' to the overall commander, who may be outside the room or space. If it is necessary for the FT or any of its members to move into another room or space for any reason, the team member moving must shout a warning, such as 'COMING IN' or 'COMING OUT'. This is critically important so that fratricidal incidents are avoided. The team members are not to move until the warning has been received by the friendly troops on the outside of the room and the signal to move 'OUT' or 'IN' has been given. At this point, the team is to ensure that it reorganises itself and is prepared to assault the next room when ordered; this should include ensuring that the team has full magazines and grenades to achieve the next assault. The team may be left within the room to deal with any casualties or POW, or to maintain security.

Variations and Special Situations

7.42 There are special situations that may require variations to the room assault drill, and variations are also used to avoid predictable patterns. These are as follows:

a. *Weak-walled Buildings.* Where the walls of buildings are weak and easily penetrated, the use of fragmentation grenades will be very restricted. If HE blast or distraction types are not available, the assault drill must be modified. Initial neutralisation by HE effect is imposed by preparatory fire before the building is assaulted. This neutralisation fire is maintained by continuous SAF penetrating through the building. Room assaults will either follow up the fire of an intimate fire support machine gun firing through the building from outside or impose neutralisation with their own small arms. Belt-fed weapons may be employed in assault groups to increase firepower.

b. *Orders For Opening Fire and Rules of Engagement Restrictions.* All commanders must take into account the orders for opening fire and ROE attached to the operations, as this factor will greatly affect both the freedom of movement and the selection of the weapon systems that may be employed.

7.43 **Night Assault.** The assault and clearance of buildings by night is particularly difficult and dangerous. In order to employ the drills described in the following paragraphs, soldiers must be equipped with specialist night-fighting equipment and have torches mounted on their weapons (night weapon sights will not allow adequate observation at close quarters for offensive action). If the enemy is not equipped with night-fighting equipment, a night assault can be conducted with no visible light, using the IR spectrum, which gives a tremendous tactical advantage.

7.44 If assaults must be mounted at night, the drill must be modified. The modifications, described as follows, assume that soldiers

are equipped with both handheld torches and in-line torches axially mounted on their weapons:

a. *Pre-positioning.* Pre-positioning is conducted as for daylight operations, but one soldier may have to be sited near the opening to work a torch from behind cover.

b. *Action on Entry.* A grenade is used in the normal fashion, but the troops protect their eyes against the flash.

c. *Enter and Dominate.* The FT enters and moves to Stage 2 positions, clearing routes along the way. They enter with torches or IR to avoid separation or firing through walls onto friendly forces. Once in the Stage 2 positions, and if this has not already been done, they may switch on the torches attached to their weapons or, if there is danger from the depth areas, call for light from a soldier outside the entry point. This soldier swings the light around the room so as to allow a search but not illuminate the soldiers inside. The use of white light has both advantages and disadvantages:

   (1) advantages:

      (a) it has a stunning effect on the enemy,

      (b) it allows for quick target acquisition, and

      (c) it allows the room or space to be cleared quickly; and

   (2) disadvantages:

      (a) strict light discipline is required,

      (b) the location of own forces can be seen from outside the building by the enemy, and

      (c) team members may need to stop and change illumination from IR to white light and back again.

d. *Reporting.* Reporting is carried out as for daylight drills. Commanders may wish to incorporate additional C2

methods to ensure that small teams do not become separated.

e. *Exploitation and Checks.* Any further checking of the room may be delayed until the threat from other openings into the space is assessed. Once it appears that an enemy is not able to observe into the area, the team members use their own weapon-mounted torches to search in short flashes.

7.45 At night, parachute flares, mini-flares and hand-thrown drop flares can be used for distraction purposes, as well as for internal illumination. The dazzling effect on own troops must be anticipated.

SECTION 7-6. HALLWAY DRILLS

7.46 Hallways are channels within a building, often comprising multiple doors and windows. They can be of various shapes and sizes, including cross-shaped, L-shaped and T-shaped, and may be blocked by obstacles to restrict progress. This section details the considerations and sequence of drills for clearing hallways.

Considerations

7.47 **Preparation.** The use of pre-prepared or standard viewing aids such as mirrors or weapon-mounted cameras can be used to inspect hallways prior to entry.

7.48 **Types of Threat.** Moving past windows, doors, mouse-holes, cupboards and wardrobes poses a potential threat. The positions of these should be identified, and they may need to be cleared while securing the hallway. Hallways provide an opportunity for forces to concentrate fire. Troops moving down hallways must be aware of weapon effects on the construction materials in order to determine the risk from enemy and friendly fire. The layout of the hallway can pose tactical dilemmas, especially when crossing an intersection or entering a T-junction.

7.49 Restrictions. Hallways channel forces into a natural field of fire. Vision is restricted to the hallway alone.

7.50 Hallway considerations include:

a. *Arcs.* Arcs of fire are allocated to team members in the same way as for room assaults.

b. *Position of Domination Within Hallways.* Positions are selected to maximise fields of fire and dominate the perceived area of threat.

c. *Movement.* Swift and silent movement is preferred. To minimise risk, movement should be conducted with cover provided by other team members, as illustrated in Figure 7–15.

d. *Dominate and Secure.* A hallway is dominated by the FT moving to points that allow total control of the hallway with proper interlocking arcs of fire.

e. *Verbal Orders/Words of Command.* C2 is imperative when moving from a pre-position of cover down hallways towards a potential enemy threat. It is prudent to use the verbal orders and words of command that are used during a room assault.

Figure 7–15: Moving Down a Hallway

Sequence of Drill

7.51 This paragraph describes the actions taken by FT and FT members in order to move, cover and dominate within hallways:

a. *T-shaped Corridor.* The first two soldiers within an FT must ensure, when moving down a hallway, that they cover across the opposite side of the hallway until a point of domination is achieved. At this stage the remaining two members of the FT move up to the rear of the first

two soldiers. On a prearranged signal all four team members move at once around the corners, two on each side, one soldier going high and one going low. All team members must ensure that they maintain as much protection as possible from the walls at the corner. Once the area/hallway has been checked, the team may move on in the direction indicated to them by the situation or the commander. Figure 7–16 and Figure 7–17 illustrate this method.

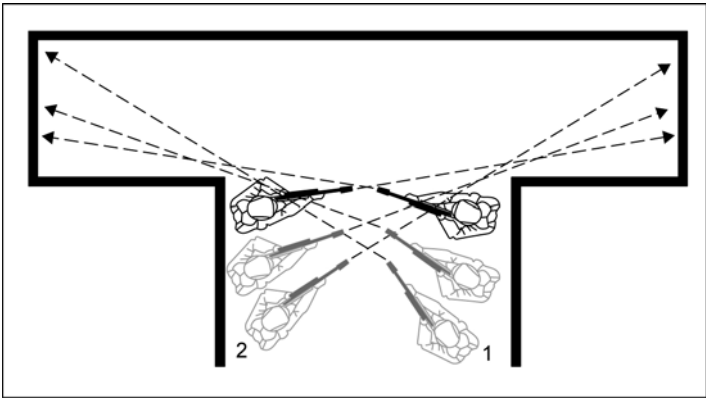


Figure 7–16: Sequence of Drills – T-shaped Corridor

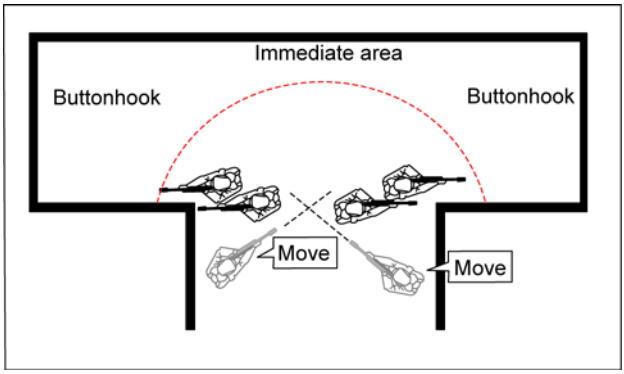


Figure 7–17: Sequence of Drills – T-shaped Corridor (Continued)

b. *L-shaped Corridor.* When a corridor changes direction to the left or right and forms an L-shape, the first two members of the FT initially move in the same way as for the T-shaped corridor. The L-shaped formation produces a long wall. One member will move along this long wall to a point where the area of space around the corner can be observed and covered. They will remain in this position to cover the other FT members around the corner. Figure 7–18 and Figure 7–19 illustrate this method.

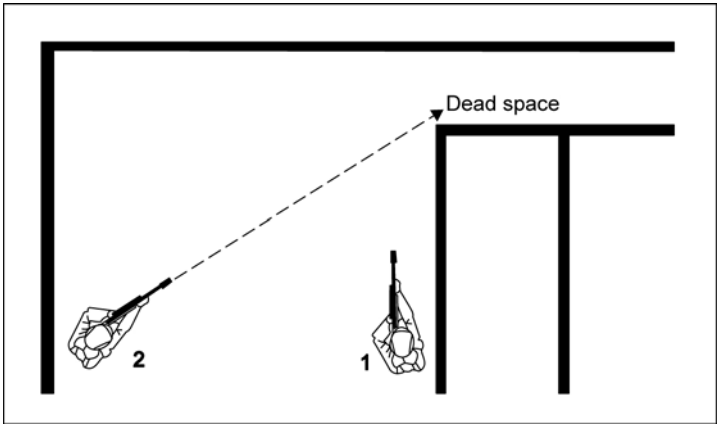


Figure 7–18: Sequence of Drills – Positioning to Clear L-shaped Corridor

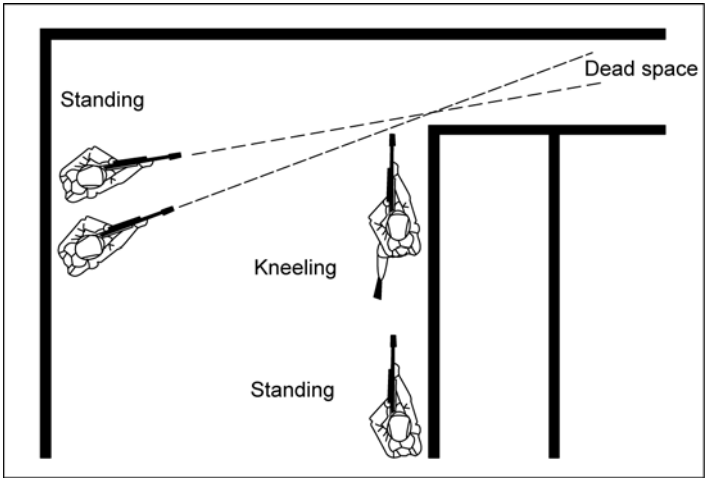


Figure 7–19: Clearing an L-shaped Corridor

SECTION 7-7. STAIRCASE DRILLS

7.52 Staircases are defiles that expose troops to attack from several directions. Movement on staircases is relatively awkward and slow. Enemy positions dominating stairways are likely to be difficult to attack using only small arms or grenades. This section provides guidance on the considerations and sequence of drills for the ascent or descent of staircases.

Considerations

7.53 The following considerations apply to the use of staircases:

a. *Preparation.* Preparation of equipment specific to the task is required. Besides standard equipment, explosives and/or distraction grenades can be attached to poles or anti-rolling devices for use in stairwells.

b. *Direction of Threat.* The likely direction of threat to troops using a staircase must be assessed. The positions that cover the exits from the staircase at each level must be identified. They may be some distance away from the staircase. External staircases are visible to a greater number of fire positions outside the building.

c. *Neutralisation.* The area of the staircase itself and those points that dominate it must be neutralised or checked prior to use.

d. *Restrictions.* The shape of most staircases restricts movement and the use of weapons. The directions in which rapid movement or fire is still possible from the staircase should be identified.

Sequence of Drill

7.54 The sequence of staircase drill for the assault is as follows:

a. pre-position, and

b. neutralise.

7.55 **Pre-positioning.** The object of pre-positioning is to place the soldiers who will move on the staircase as close to it as

possible, and to place others to support the move with small arms, explosives or distraction devices. Covering tasks within the building may include:

a. cover soldiers at the base of the stairwell to fire upwards,

b. a soldier with a pole charge to neutralise the next level of the stairwell, and

c. cover soldiers to fire weapons or charges through the floor from below.

7.56 Figure 7–20 illustrates the positions of soldiers within a four-man FT clearing a stairwell.

Figure 7–20: Clearing Stairways

7.57 **Neutralise.** The next floor is neutralised by fire and explosive attack. This is usually most conveniently provided from outside the building but, failing this, small arms are fired through the floor below areas where an enemy would be able to cover the stairwell exit. In buildings with concrete slab floors, charges may be placed against the ceiling or floor to detonate and scatter fragments on the target level. Pole charges may be raised or lowered in the stairwell itself and detonated to clear the immediate area of the exit on the next level. As a distraction, they may also be detonated to clear outside windows on the enemy level away from the staircase.

SECTION 7-8. INTERIOR SEARCH AWARENESS

7.58 The successful detection of booby-traps depends on the following two factors:

a. an awareness of what might be booby-trapped and why, and

b. an ability to recognise evidence of trap setting.

7.59 The first requirement demands a well-developed sense of intuition, and the second a keen eye. Intuition, like mine sense, is gained through experience and an understanding of the enemy's techniques and habits. A keen eye is the result of training and practice in the recognition of the signs that may indicate the presence of a trap. The following list contains examples of clues that may indicate the presence of booby traps:

a. an absence of people;

b. attractive items;

c. loose floorboards;

d. wrappers, seals, loose caps from shells, safety-pins, nails, and pieces of wire or cord;

e. improvised methods of marking traps, such as piles of stones, and marks on walls and trees;

f. evidence of camouflage, such as withered vegetation or signs of cutting;

g. breaks in the continuity of dust, paintwork or vegetation;

h. trampled earth or vegetation, and footmarks; and

i. lumps or bulges under carpets and in furniture.

Sequence of Booby Trap and Explosive Device Search

7.60 It is not possible to describe a search drill that will be suitable in all buildings. It is essential that each team develops and follows its own drill. Indications of the presence of booby traps should be borne in mind as the room is scanned in a logical sequence. The following can be used as a guide:

a. floors and furniture;

b. walls (including doors, windows and fireplaces); and

c. ceilings.

Booby Trap Clearance

7.61 Primary responsibility for the clearance of booby traps in the AO rests with RAE and qualified assault pioneer personnel. No attempt should be made by any other personnel to neutralise or disarm a booby trap. If a booby trap is sighted or suspected, it should be marked.

7.62 No attempt should be made to place a cone or other marker over any part of a booby trap, as it may have more than one means of activation. Sufficient signs should be used to ensure that the trap is immediately visible and to enable it to be accurately located. Rooms containing traps should be clearly marked, and the exact locations of the trap or traps should be indicated, recorded and reported.

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CHAPTER 8

COMBINED ARMS SCENARIOS

SECTION 8-1. INTRODUCTION

8.1 This chapter describes a series of scenarios based on combined arms teams. It is focused on the defence, attack, and cordon and search. The purpose of the chapter is to provide a pictorial representation of the planning, initiation and conduct of activities within realistic scenarios.

8.2 Detailed explanations and descriptions of the techniques and procedures used to conduct these scenarios can be found in the following publications:

a. *LWD 3-0-3, Land Tactics*; and

b. *LWP-CA (MTD CBT) 3-3-1, Mounted Minor Tactics*.

SECTION 8-2. COMBAT TEAM DEFENCE

General Scenario

8.3 The following is the general defensive scenario:

a. A Coy faces an enemy infantry battalion at 80 per cent strength.

b. The enemy will attack from the south and east to attempt to secure the bridge in the A Coy sector and pass mechanised forces across the river to envelop the friendly brigade position from the west.

c. The enemy has limited infantry to clear urban terrain.

d. A Coy is tasked to block the enemy infantry attack and to seize the bridgehead in the battalion sector in order to cause the enemy main attack to divert east against the brigade main effort.

e. A Coy has four days in which to prepare defensive positions and obstacles.

f. Extensive mine and wire obstacles are available for use as tactical and protective obstacles.

g. A brigade blocking obstacle is directed in the A Coy sector.

h. A Coy is a light infantry company task-organised with:

(1) three infantry platoons, and

(2) two direct support fire weapons sections.

i. A Coy receives a dedicated engineer troop for the first 72 hours to emplace brigade-directed obstacles and conduct defensive preparations in accordance with the OC's priorities of work.

j. The priority of mortar and artillery fires is determined.

Approach

8.4 The following sequence of activities should be undertaken as the scenario is developed and conducted:

a. Visualise how the enemy might attack (see Figure 8–1).

1. Battalion reconnaissance elements establish overwatch of ingress routes and objective area.
2. First company clears, then establishes SBF locations to support attack to clear the near side of the bridge.
3. Second company establishes foothold and clears Sector A; passes third company through to clear Sector B.
4. Third company clears Sector B.
5. Third company clears Sector C.
6. Second company clears Sector D.
7. Third company clears Sector E to secure the near side of the bridge.
8. Engineers conduct unopposed breach of obstacles through depth of objective.
9. Combined arms company assaults through breach and secures far side of bridge; second echelon battalion passes north.

Figure 8–1: Visualise Enemy Attack

b. Develop the concept of operations (see Figure 8–2).

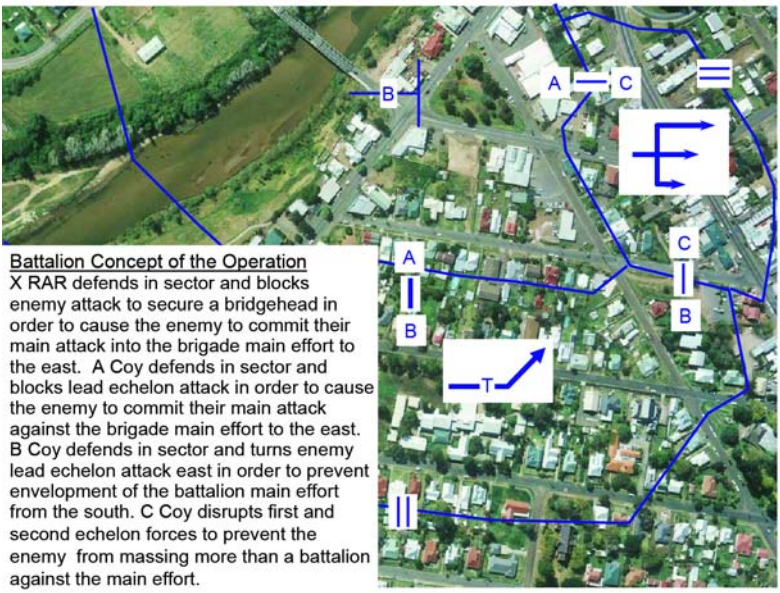
Battalion Concept of the Operation
X RAR defends in sector and blocks enemy attack to secure a bridgehead in order to cause the enemy to commit their main attack into the brigade main effort to the east. A Coy defends in sector and blocks lead echelon attack in order to cause the enemy to commit their main attack against the brigade main effort to the east. B Coy defends in sector and turns enemy lead echelon attack east in order to prevent envelopment of the battalion main effort from the south. C Coy disrupts first and second echelon forces to prevent the enemy from massing more than a battalion against the main effort.
B
A
C
A
C
B
B
T

Figure 8–2: Concept of Operations

c. Develop a building numbering system (see Figure 8–3).

Figure 8–3: Building Numbering System

d. Visualise enemy avenues of approach (see Figure 8–4).

Figure 8–4: Enemy Avenues of Approach

e. Select positions in the urban terrain (see Figure 8–5):

(1) arrayed to defeat the enemy attack and accomplish the assigned mission, and

(2) that provide mutual support.

Figure 8–5: Select Positions

f. Once battle positions have been selected, sectors of fire are determined from these.

g. Once sectors of fire have been identified, they are overlapped to determine the best EA (see Figure 8–6).

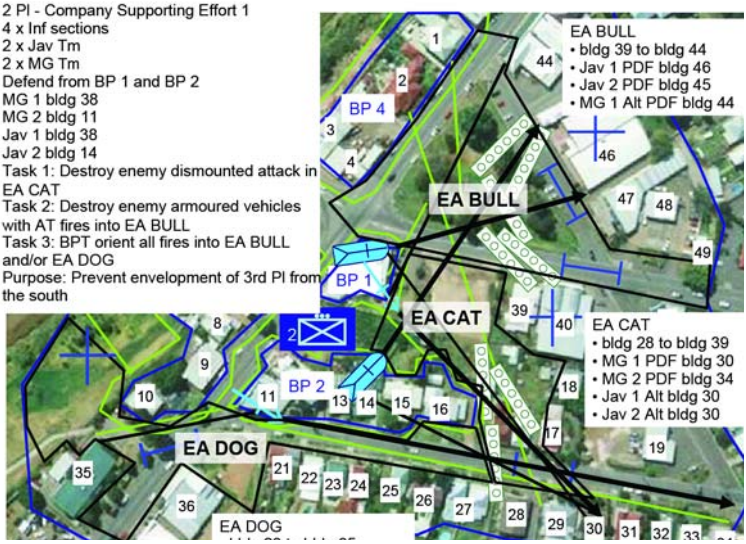
2 Pl - Company Supporting Effort 1
4 x Inf sections
2 x Jav Tm
2 x MG Tm
Defend from BP 1 and BP 2
MG 1 bldg 38
MG 2 bldg 11
Jav 1 bldg 38
Jav 2 bldg 14
Task 1: Destroy enemy dismounted attack in EA CAT
Task 2: Destroy enemy armoured vehicles with AT fires into EA BULL
Task 3: BPT orient all fires into EA BULL and/or EA DOG
Purpose: Prevent envelopment of 3rd Pl from the south
EA BULL
• bldg 39 to bldg 44
• Jav 1 PDF bldg 46
• Jav 2 PDF bldg 45
• MG 1 Alt PDF bldg 44
EA CAT
• bldg 28 to bldg 39
• MG 1 PDF bldg 30
• MG 2 PDF bldg 34
• Jav 1 Alt bldg 30
• Jav 2 Alt bldg 30
BP 1
BP 2
BP 4
EA BULL
EA CAT
EA DOG

Figure 8–6: Determine Engagement Areas

h. EA are then assigned.

i. Position key weapons systems and assign primary and alternate directions of fire.

j. Position obstacles to correspond with the primary and alternate directions of fire (see Figure 8–7).

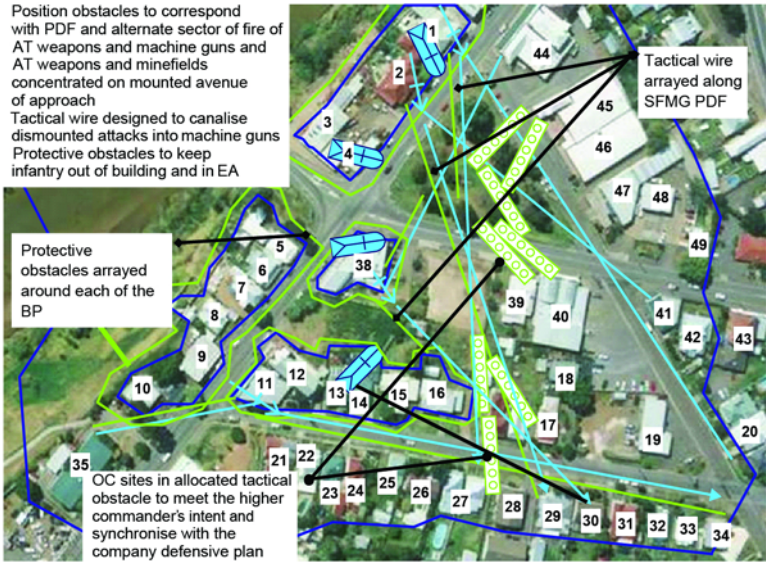
Position obstacles to correspond with PDF and alternate sector of fire of AT weapons and machine guns and AT weapons and minefields concentrated on mounted avenue of approach
Tactical wire designed to canalise dismounted attacks into machine guns
Protective obstacles to keep infantry out of building and in EA
Protective obstacles arrayed around each of the BP
Tactical wire arrayed along SFMG PDF
OC sites in allocated tactical obstacle to meet the higher commander's intent and synchronise with the company defensive plan

Figure 8–7: Obstacle Positioning

k. Indirect fire plans are developed to support the direct fire and obstacle plans (see Figure 8–8).

Figure 8–8: Plan Indirect Fire

l. Determine the main effort and supporting efforts, as depicted in Figure 8–9 to Figure 8–11.

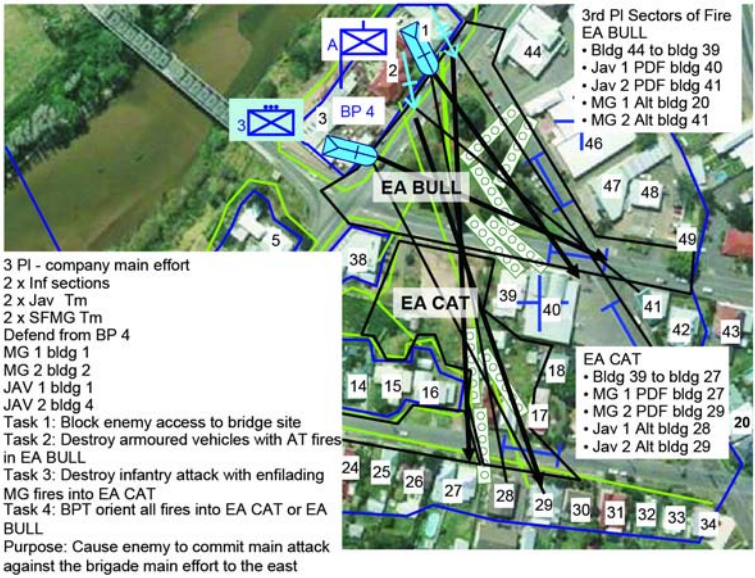

Figure 8–9: Company Main Effort

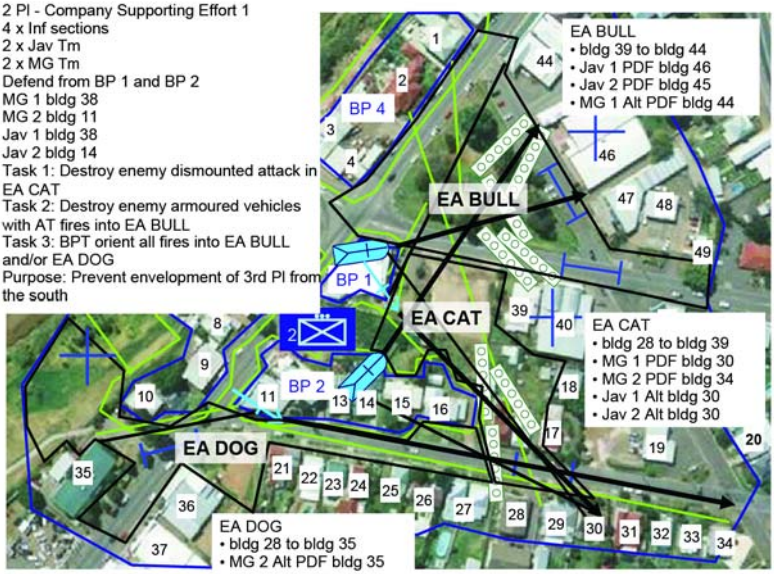
2 Pl - Company Supporting Effort 1
4 x Inf sections
2 x Jav Tm
2 x MG Tm
Defend from BP 1 and BP 2
MG 1 bldg 38
MG 2 bldg 11
Jav 1 bldg 38
Jav 2 bldg 14
Task 1: Destroy enemy dismounted attack in EA CAT
Task 2: Destroy enemy armoured vehicles with AT fires into EA BULL
Task 3: BPT orient all fires into EA BULL and/or EA DOG
Purpose: Prevent envelopment of 3rd Pl from the south
EA BULL
• bldg 39 to bldg 44
• Jav 1 PDF bldg 46
• Jav 2 PDF bldg 45
• MG 1 Alt PDF bldg 44
EA CAT
• bldg 28 to bldg 39
• MG 1 PDF bldg 30
• MG 2 PDF bldg 34
• Jav 1 Alt bldg 30
• Jav 2 Alt bldg 30
EA DOG
• bldg 28 to bldg 35
• MG 2 Alt PDF bldg 35
BP 1
BP 2
BP 4
EA BULL
EA CAT
EA DOG

Figure 8–10: Supporting Effort 1

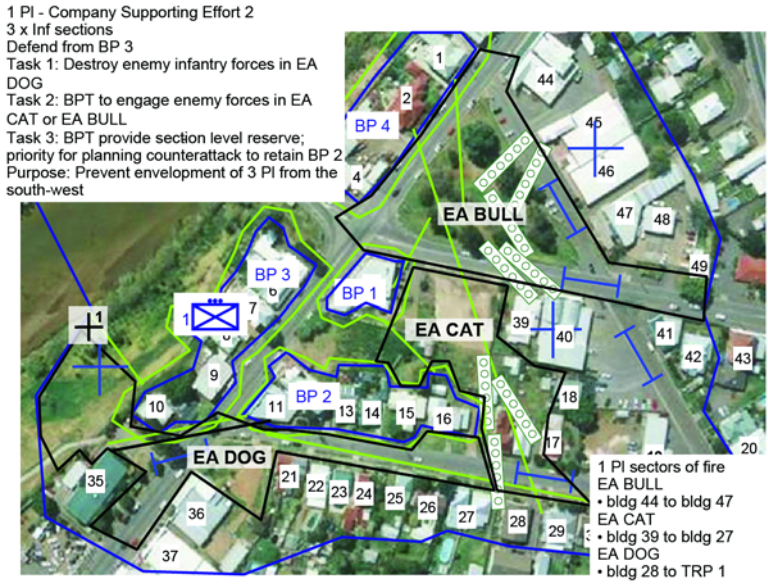
1 PI - Company Supporting Effort 2
3 x Inf sections
Defend from BP 3
Task 1: Destroy enemy infantry forces in EA DOG
Task 2: BPT to engage enemy forces in EA CAT or EA BULL
Task 3: BPT provide section level reserve; priority for planning counterattack to retain BP 2
Purpose: Prevent envelopment of 3 PI from the south-west
BP 4
BP 3
BP 1
BP 2
EA BULL
EA CAT
EA DOG
1 PI sectors of fire
EA BULL
• bldg 44 to bldg 47
EA CAT
• bldg 39 to bldg 27
EA DOG
• bldg 28 to TRP 1

Figure 8–11: Company Supporting Effort 2

m. Determine and confirm final positions to be manned at the 'no later than' defend time, as depicted in Figure 8–12.

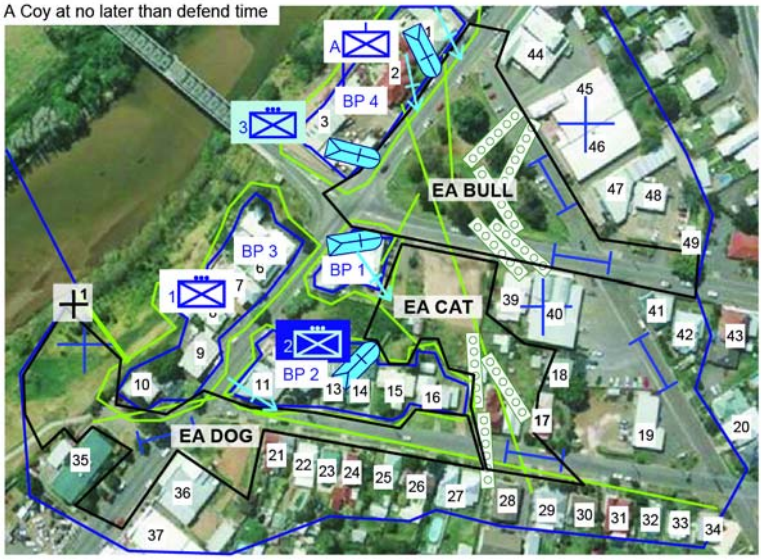

Figure 8–12: Confirm Final Positions

n. The defensive position is then tested against the most likely and most dangerous enemy COA, as depicted in Figure 8–13.

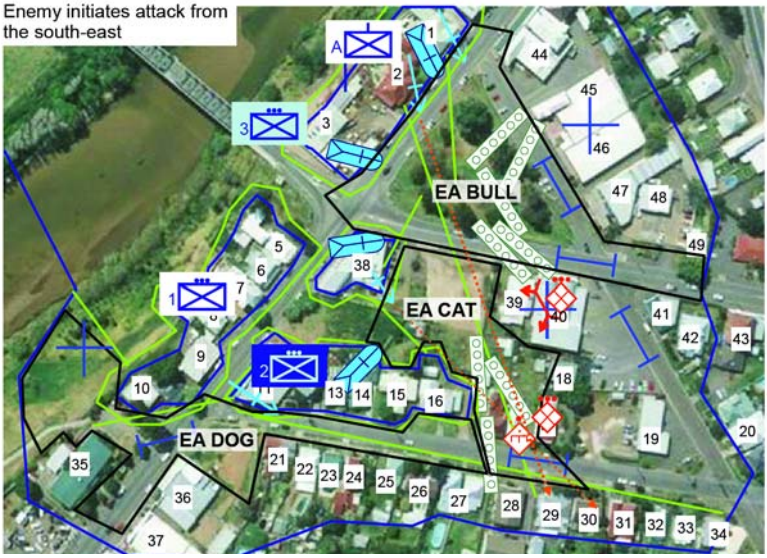

Figure 8–13: Test Against Enemy Attack

SECTION 8-3. COMBAT TEAM ATTACK

General Scenario

8.5 The following is the general attack scenario:

a. A Coy is task-organised with three infantry platoons, a tank troop, an engineer section and a direct fire support weapon (DFSW) section.

b. The lead company in the battalion has secured a foothold in the block of Buildings 1 to 7, and A Coy is now established with forces postured to suppress and assault key enemy positions in their assigned zone.

c. A Coy has in direct support a mortar platoon until the next company in the task force begins their clearance.

d. A reinforced enemy platoon occupies A Coy's zone.

e. A Coy clears enemy forces in their assigned zone to facilitate the assault of the battalion main effort to clear an enemy platoon in the Building 18 and 19 complex.

Concept of Operations

8.6 A Coy attacks and clears a secure route in their zone in order to allow the unhindered passage of B Coy, the task force main effort, into their assigned zone to the east. The decisive point for this operation is the clearance of enemy forces from Building 20. 1 Pl, the company main effort, task-organised with three infantry sections and an engineer section, assaults and clears Building 20 to allow the passage of B Coy into their zone. 2 Pl, Supporting Effort 1, task-organised with three infantry sections, clears Building 12 in order to facilitate the unhindered movement of the main effort to Building 20. A tank troop, Supporting Effort 2, suppresses enemy positions in the zone in order to allow the main effort assault onto their objective. 3 Pl, Supporting Effort 3, task-organised with three infantry sections and a DFSW section, assaults and clears Building 11, and establishes an SBF to prevent the repositioning of enemy forces against the main effort. On order, B Coy assault elements pass through Building 20 into their zone.

Approach

8.7 The following sequence of activities should be undertaken as the scenario is developed and conducted:

a. Preparation takes place for the assault on Building 11 (see Figure 8–14):

(1) determine the POE,

(2) determine the route to the POE, and

(3) determine which known and suspected enemy positions can influence the route.

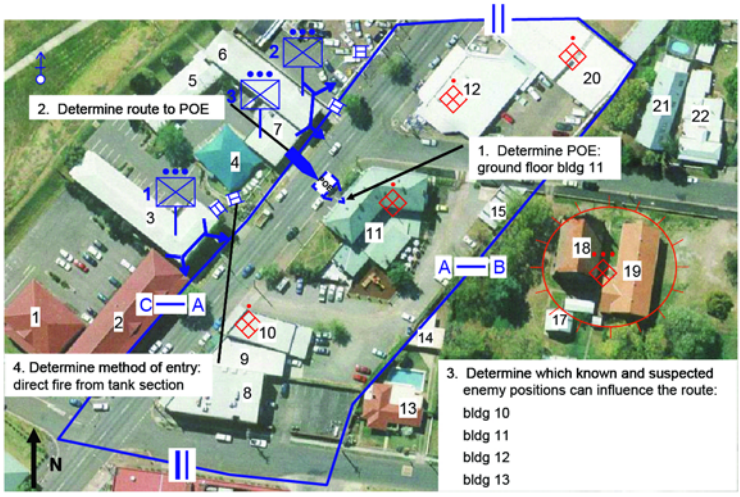
2. Determine route to POE
1. Determine POE: ground floor bldg 11
4. Determine method of entry: direct fire from tank section
3. Determine which known and suspected enemy positions can influence the route:
bldg 10
bldg 11
bldg 12
bldg 13
N

Figure 8–14: Preparation for Assault on Building 11

b. The leading assault element gains a foothold in Building 11 (see Figure 8–15):

(1) a direct fire breach of the building,

(2) support elements suppress targeted surrounding buildings,

(3) the route is obscured, and

(4) the FE assaults the building.

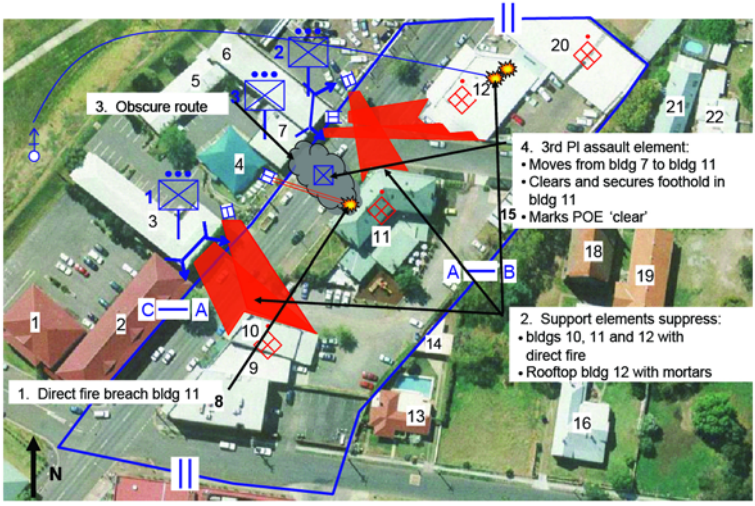
3. Obscure route
4. 3rd PI assault element:
• Moves from bldg 7 to bldg 11
• Clears and secures foothold in bldg 11
• Marks POE 'clear'
2. Support elements suppress:
• bldgs 10, 11 and 12 with direct fire
• Rooftop bldg 12 with mortars
1. Direct fire breach bldg 11
N

Figure 8–15: Assault of Building 11

c. The platoon conducts the preparatory stage for the assault on Building 11 (see Figure 8–16):

(1) determine which known and suspected enemy positions can influence the route,

(2) determine the POE,

(3) determine the method of entry,

(4) pre-position the FT in the FUP, and

(5) conceal the route to the POE with obscuration such as smoke.

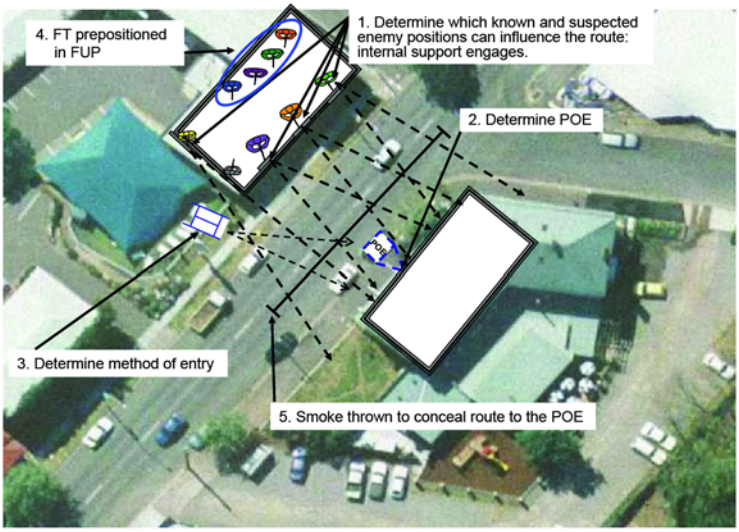
4. FT prepositioned in FUP
1. Determine which known and suspected enemy positions can influence the route: internal support engages.
2. Determine POE
3. Determine method of entry
5. Smoke thrown to conceal route to the POE

Figure 8–16: Preparatory Stage of Assault

d. The platoon conducts the assault stage on Building 11 (see Figure 8–17):

(1) fire the method of entry;

(2) internal support fires switch/shift off the breach site;

(3) the FT moves to the POE; and

(4) the FT enters, exploits, reorganises and secures a foothold for the remaining platoon elements.

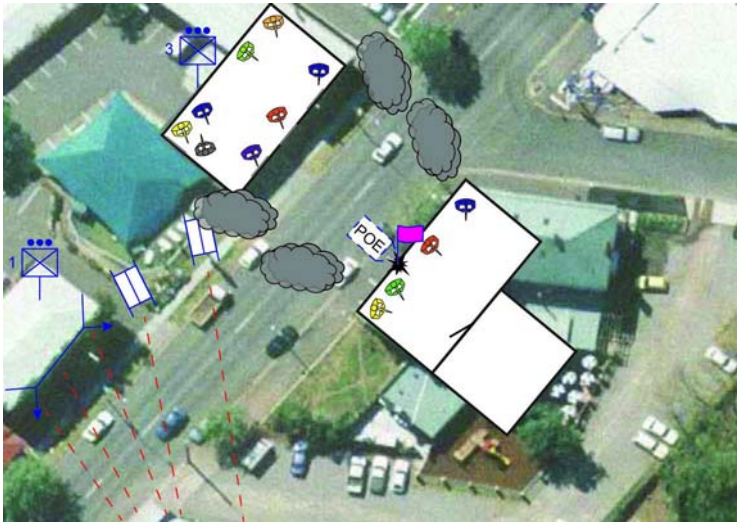

Figure 8–17: Platoon Assult Stage

e. The next assault element is passed into Building 11 through the foothold to prepare for clearance of the building (see Figure 8–18):

(1) support elements continue to suppress identified buildings and positions;

(2) the route is continually obscured; and

(3) the next element moves into position (staging in the foothold).

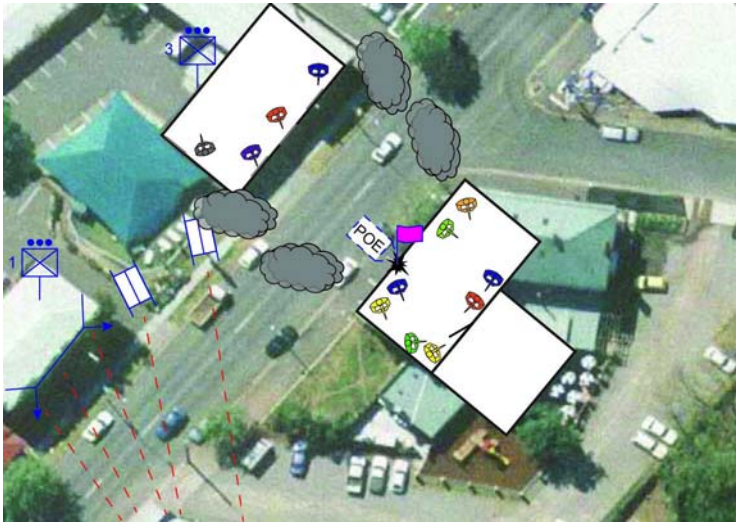

Figure 8–18: Next Element Assaults

f. Once the lead assault element clears the ground floor of Building 11, the remainder of the platoon moves into the building to prepare for clearance of the building (see Figure 8–19):

(1) the support elements continue suppression;

(2) the route is obscured until the platoon completes its move;

(3) the lead assault elements conduct systematic clearance of the ground floor and report when the ground floor is secure; and

(4) once the ground floor is secure, the remainder of the platoon moves to the building and stages in the foothold prior to clearance of building.

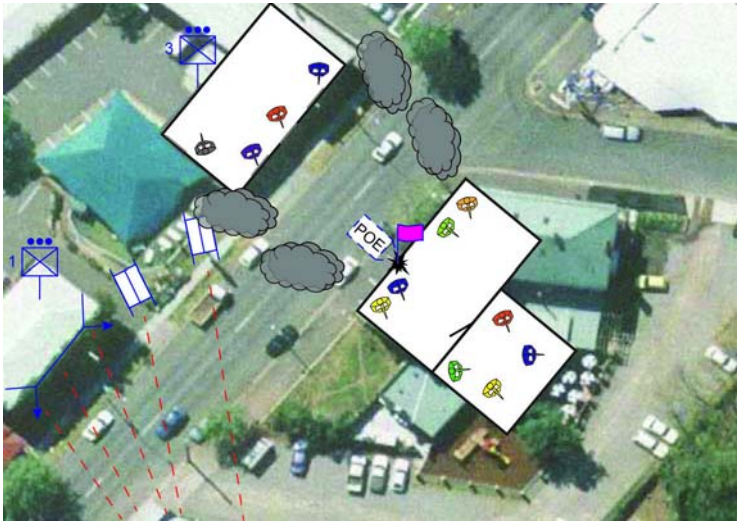

Figure 8–19: Building Clearance

g. Systematic clearance of Building 11 is conducted:

(1) the support elements lift fire and overwatch to prevent the enemy from repositioning its forces in the building,

(2) the platoon conducts a systematic clearance, and

(3) tanks reposition to isolate the building and provide a vantage point for subsequent clearances.

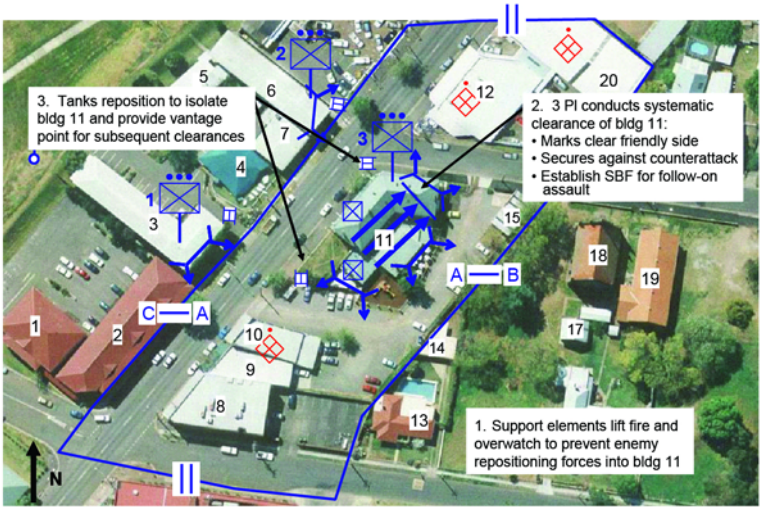
3. Tanks reposition to isolate bldg 11 and provide vantage point for subsequent clearances
2. 3 Pl conducts systematic clearance of bldg 11:
• Marks clear friendly side
• Secures against counterattack
• Establish SBF for follow-on assault
1. Support elements lift fire and overwatch to prevent enemy repositioning forces into bldg 11
A
B
C
A
N

Figure 8–20: Systematic Clearance of Building 11

h. Preparation for the assault on Building 12 (see Figure 8–21) is conducted:

(1) determine the POE,

(2) determine the route to the POE,

(3) determine which known and suspected enemy positions can influence the route, and

(4) determine the method of entry.

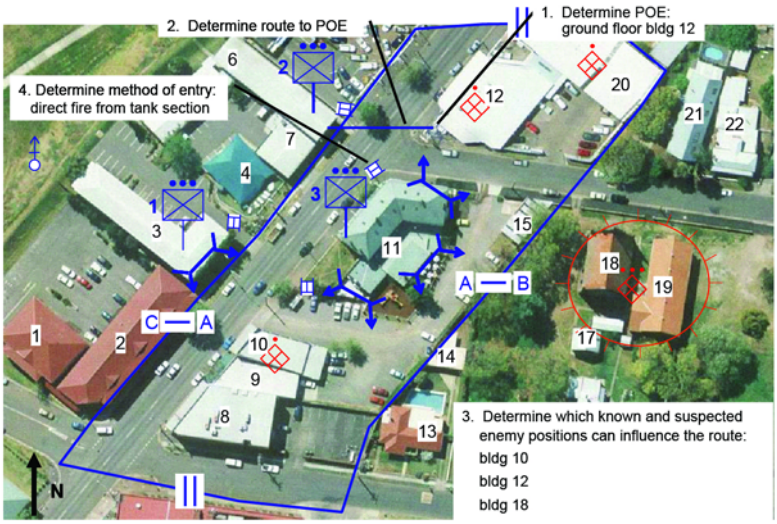

Figure 8–21: Preparation for Assault on Building 12

i. Conduct the assault on Building 12 and gain a foothold (see Figure 8–22):

(1) a direct fire breach,

(2) suppression by support elements,

(3) obscuration of the route,

(4) the assault on the building, and

(5) overwatch by support elements.

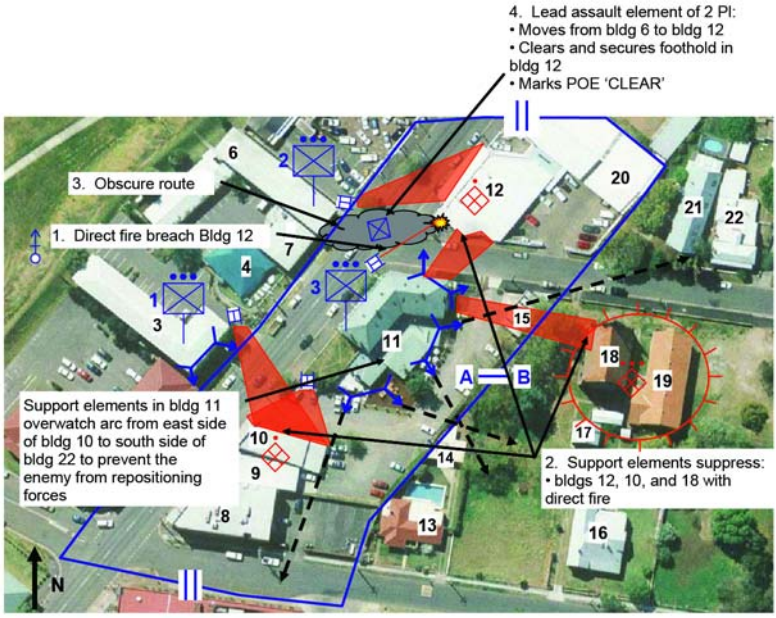
4. Lead assault element of 2 PI:
• Moves from bldg 6 to bldg 12
• Clears and secures foothold in bldg 12
• Marks POE 'CLEAR'
3. Obscure route
1. Direct fire breach Bldg 12
Support elements in bldg 11 overwatch arc from east side of bldg 10 to south side of bldg 22 to prevent the enemy from repositioning forces
2. Support elements suppress:
• bldgs 12, 10, and 18 with direct fire
A
B
N

Figure 8–22: Assault on Building 12

j. The remainder of 2 Pl moves into Building 12 through the foothold to prepare for clearance of the building (see Figure 8–23):

(1) continued obscuration of the route,

(2) continued suppression by support elements,

(3) concurrent movement by follow-on elements, and

(4) continued overwatch by support elements.

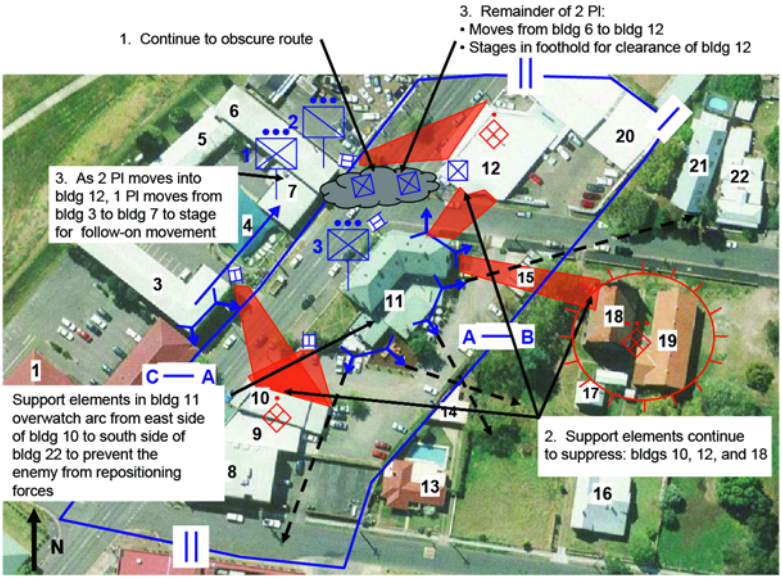
1. Continue to obscure route
3. Remainder of 2 PI:
• Moves from bldg 6 to bldg 12
• Stages in foothold for clearance of bldg 12
3. As 2 PI moves into bldg 12, 1 PI moves from bldg 3 to bldg 7 to stage for follow-on movement
Support elements in bldg 11 overwatch arc from east side of bldg 10 to south side of bldg 22 to prevent the enemy from repositioning forces
2. Support elements continue to suppress: bldgs 10, 12, and 18
C — A
A — B
N

Figure 8–23: Assault on Building 12 (Continued)

k. Clearance of Building 12 (see Figure 8–24) is commenced:

(1) support elements lift fire and overwatch to prevent the enemy from repositioning their forces into Building 12, and

(2) a systematic clearance of the building is conducted.

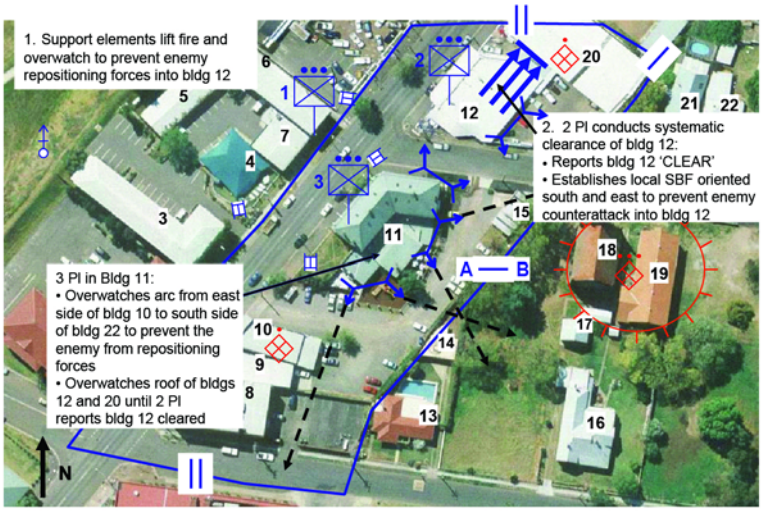
1. Support elements lift fire and overwatch to prevent enemy repositioning forces into bldg 12
2. 2 Pl conducts systematic clearance of bldg 12:
• Reports bldg 12 'CLEAR'
• Establishes local SBF oriented south and east to prevent enemy counterattack into bldg 12
3 Pl in Bldg 11:
• Overwatches arc from east side of bldg 10 to south side of bldg 22 to prevent the enemy from repositioning forces
• Overwatches roof of bldgs 12 and 20 until 2 Pl reports bldg 12 cleared
A — B
N

Figure 8–24: Clearance of Building 12

l. 1 Pl bounds to Building 12 to stage for the assault on Building 20 (see Figure 8–25).

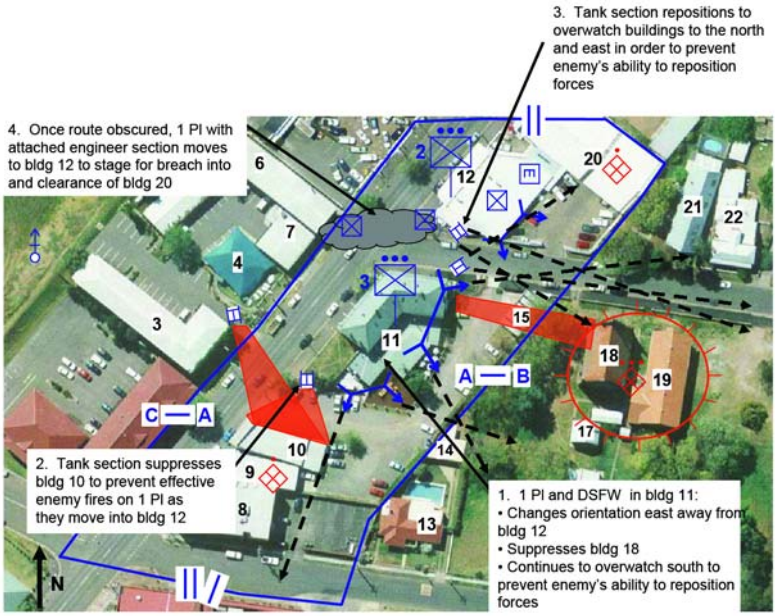
3. Tank section repositions to overwatch buildings to the north and east in order to prevent enemy's ability to reposition forces
4. Once route obscured, 1 PI with attached engineer section moves to bldg 12 to stage for breach into and clearance of bldg 20
2. Tank section suppresses bldg 10 to prevent effective enemy fires on 1 PI as they move into bldg 12
1. 1 PI and DSFW in bldg 11:
• Changes orientation east away from bldg 12
• Suppresses bldg 18
• Continues to overwatch south to prevent enemy's ability to reposition forces
C — A
A — B
N

Figure 8–25: Preparation for Assault on Building 20

m. 1 PI assaults and clears Building 20 from Building 12 (see Figure 8–26).

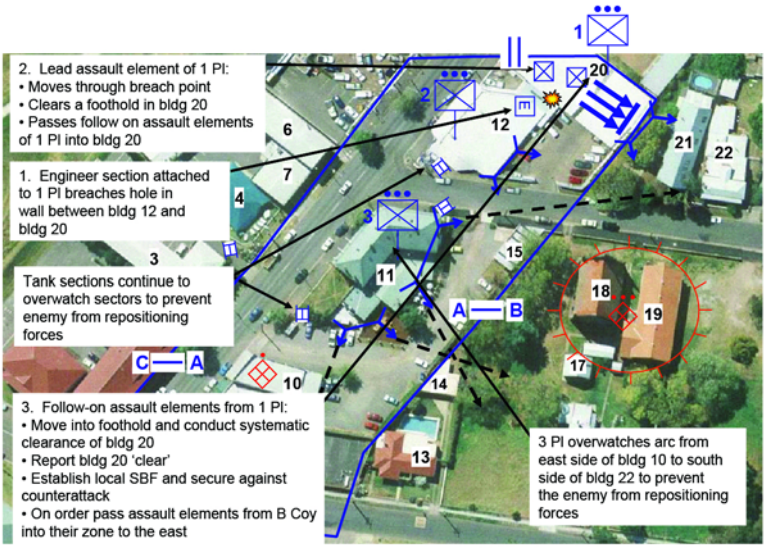
2. Lead assault element of 1 PI:
• Moves through breach point
• Clears a foothold in bldg 20
• Passes follow on assault elements of 1 PI into bldg 20
1. Engineer section attached to 1 PI breaches hole in wall between bldg 12 and bldg 20
Tank sections continue to overwatch sectors to prevent enemy from repositioning forces
3. Follow-on assault elements from 1 PI:
• Move into foothold and conduct systematic clearance of bldg 20
• Report bldg 20 'clear'
• Establish local SBF and secure against counterattack
• On order pass assault elements from B Coy into their zone to the east
3 PI overwatches arc from east side of bldg 10 to south side of bldg 22 to prevent the enemy from repositioning forces
A
B
C
A

Figure 8–26: Assault on Building 20

SECTION 8-4. COMBAT TEAM CORDON AND SEARCH

General Scenario

8.8 The following is the general cordon and search scenario:

a. A Coy conducts a cordon and search and secures the insurgent C2 element in order to facilitate the re-establishment of host nation security forces in the area.

b. B Coy secures Route DOG from the forward operating base to AO TOBRUK to facilitate the movement of A Coy back to the forward operating base following the cordon and search.

c. A Coy is task-organised with:

(1) three infantry platoons mounted in Bushmasters,

(2) a DFSW section,

(3) an engineer section,

(4) a loudspeaker team,

(5) a mine-detector team,

(6) two explosive-detection dog teams,

(7) a female search team,

(8) a tactical human intelligence team, and

(9) an explosive ordnance disposal team.

d. A Coy has two armed reconnaissance helicopters in direct support.

e. The enemy consists of approximately 20 to 30 military-aged males in the vicinity of the safe house, and includes the C2 cell responsible for directing local insurgent operations.

f. The C2 cell includes the district insurgent leader; his brother, who serves as the military commander for local insurgent forces; a female secretary; and three personal security guards. The cell moves in a light blue Volkswagon combi-van.

g. UAV surveillance over the objective area confirms that the light blue Volkswagon combi-van arrived at the safe house and has not departed.

h. A source will accompany the operation to identify cell members and leadership.

i. All platoons in A Coy have interpreters.

j. Host nation security forces will conduct relief in place with A Coy in AO TOBRUK when cordon and search operations are complete.

8.9 A diagrammatic representation of the situation is provided in Figure 8–27.

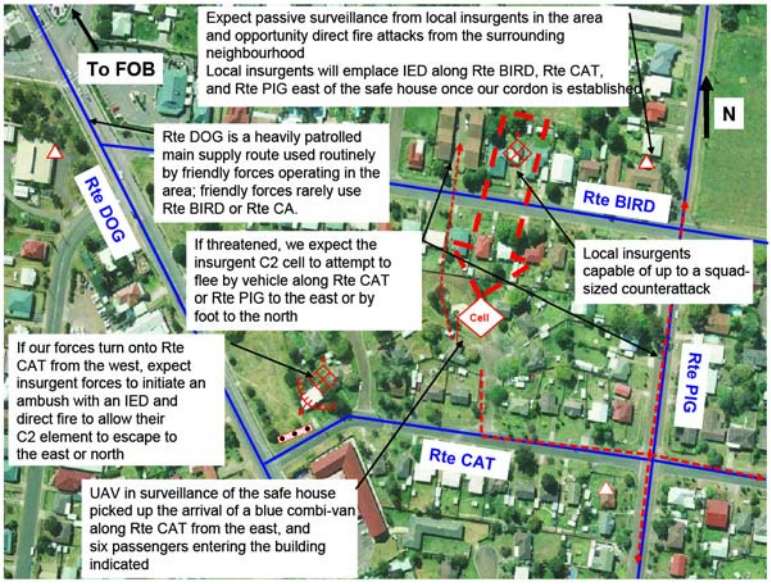
Expect passive surveillance from local insurgents in the area and opportunity direct fire attacks from the surrounding neighbourhood
Local insurgents will emplace IED along Rte BIRD, Rte CAT, and Rte PIG east of the safe house once our cordon is established
To FOB
N
Rte DOG is a heavily patrolled main supply route used routinely by friendly forces operating in the area; friendly forces rarely use Rte BIRD or Rte CA.
Rte DOG
Rte BIRD
If threatened, we expect the insurgent C2 cell to attempt to flee by vehicle along Rte CAT or Rte PIG to the east or by foot to the north
Local insurgents capable of up to a squad-sized counterattack
Cell
If our forces turn onto Rte CAT from the west, expect insurgent forces to initiate an ambush with an IED and direct fire to allow their C2 element to escape to the east or north
Rte PIG
Rte CAT
UAV in surveillance of the safe house picked up the arrival of a blue combi-van along Rte CAT from the east, and six passengers entering the building indicated

Figure 8–27: Diagrammatic Representation of Cordon and Search Situation

Concept of Operations

8.10 A Coy conducts a cordon and search in AO TOBRUK and secures an insurgent leadership cell in the vicinity of Objective RED in order to facilitate the re-establishment of host nation security forces in the battalion AO. 2 Pl, the main effort, task-organised with three infantry sections, two spare Bushmasters for detainees, a loudspeaker team, a tactical human intelligence team, two explosive-detection dog teams, a female search team, a mine-detector team and an explosive ordnance disposal team, conducts a search of Objective RED and secures an insurgent leadership cell in order to facilitate the re-establishment of host nation security forces in the

battalion AO. 1 Pl also clears Objective GREEN to facilitate search operations and the subsequent withdrawal. 3 Pl, Supporting Effort 1, task-organised with three infantry sections, establishes an inner cordon and isolates Objective RED to prevent the enemy leadership cell from escaping from 2 Pl's search of Objective RED. 1 Pl, Supporting Effort 2, task-organised with three infantry sections, a DFSW section and an engineer section, establishes an outer cordon and isolates Objective RED to prevent enemy forces from interfering with the conduct of search operations by the main effort. 1 Pl establishes obstacles and blocks vehicular traffic in the vicinity of checkpoints 1 and 2, and clears Objective WHITE to facilitate search operations and the subsequent withdrawal. An armed reconnaissance helicopter overwatches Objective RED and interdicts vehicular movement of the insurgent leadership cell prior to the establishment of an inner cordon by 3 Pl; transitions to surveillance of Route CAT and Route BIRD east of AO TOBRUK to provide early warning of mounted insurgent forces from the east; and prepares to provide close combat attack to units in contact for the duration of the cordon and search.

Approach

8.11 The following sequence of activities should be undertaken as the scenario is developed and conducted:

a. Orientate the concept of operations to the AO and determine objectives, named areas of interest, routes and FUP (see Figure 8–28).

Figure 8–28: Orientation of Position

b. A cordon and search consists of a series of coordinated activities that are well planned, rehearsed and conducted by a combined arms team. Figure 8–29 to Figure 8–33 describe a series of activities that are conducted during a cordon and search.

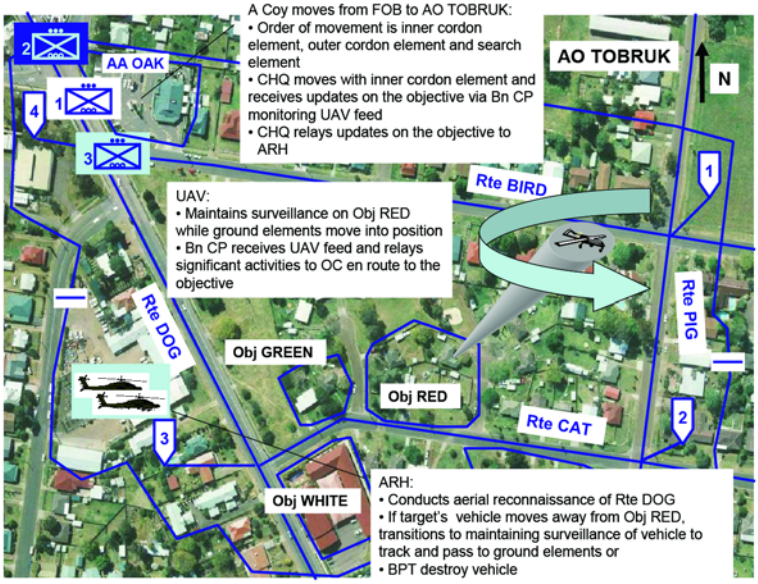
A Coy moves from FOB to AO TOBRUK:
• Order of movement is inner cordon element, outer cordon element and search element
• CHQ moves with inner cordon element and receives updates on the objective via Bn CP monitoring UAV feed
• CHQ relays updates on the objective to ARH
AO TOBRUK
N
AA OAK
Rte BIRD
UAV:
• Maintains surveillance on Obj RED while ground elements move into position
• Bn CP receives UAV feed and relays significant activities to OC en route to the objective
Rte DOG
Rte PIG
Obj GREEN
Obj RED
Rte CAT
Obj WHITE
ARH:
• Conducts aerial reconnaissance of Rte DOG
• If target's vehicle moves away from Obj RED, transitions to maintaining surveillance of vehicle to track and pass to ground elements or
• BPT destroy vehicle

Figure 8–29: Initial Actions for Cordon and Search

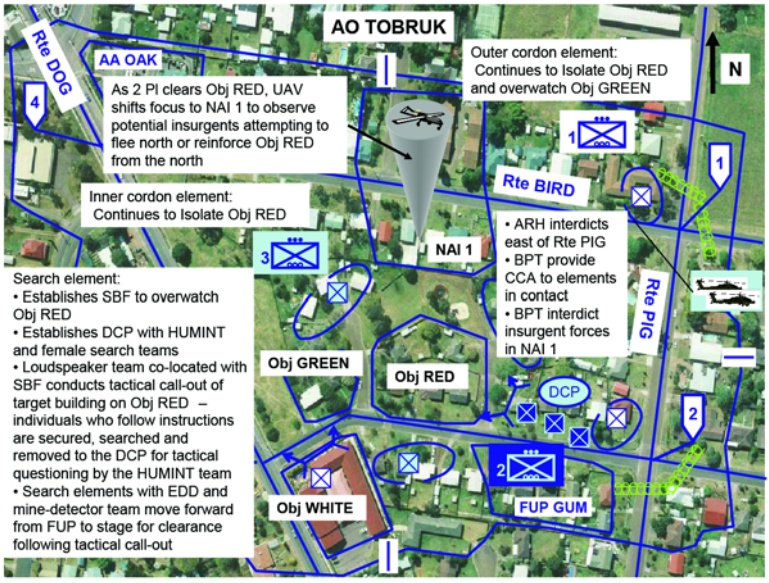
AO TOBRUK
Rte DOG
AA OAK
As 2 PI clears Obj RED, UAV shifts focus to NAI 1 to observe potential insurgents attempting to flee north or reinforce Obj RED from the north
Outer cordon element: Continues to Isolate Obj RED and overwatch Obj GREEN
N
Rte BIRD
Inner cordon element: Continues to Isolate Obj RED
NAI 1
• ARH interdicts east of Rte PIG
• BPT provide CCA to elements in contact
• BPT interdict insurgent forces in NAI 1
Rte PIG
Search element:
• Establishes SBF to overwatch Obj RED
• Establishes DCP with HUMINT and female search teams
• Loudspeaker team co-located with SBF conducts tactical call-out of target building on Obj RED – individuals who follow instructions are secured, searched and removed to the DCP for tactical questioning by the HUMINT team
• Search elements with EDD and mine-detector team move forward from FUP to stage for clearance following tactical call-out
Obj GREEN
Obj RED
DCP
Obj WHITE
FUP GUM

Figure 8–30: Clearing Objectives

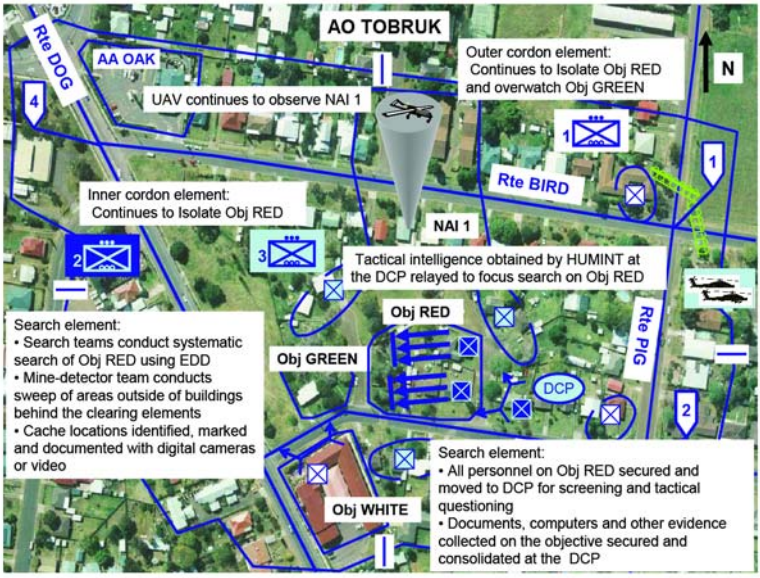
AO TOBRUK
Rte DOG
AA OAK
4
UAV continues to observe NAI 1
Outer cordon element:
Continues to Isolate Obj RED
and overwatch Obj GREEN
N
1
Rte BIRD
Inner cordon element:
Continues to Isolate Obj RED
NAI 1
2
3
Tactical intelligence obtained by HUMINT at
the DCP relayed to focus search on Obj RED
Search element:
• Search teams conduct systematic search of Obj RED using EDD
• Mine-detector team conducts sweep of areas outside of buildings behind the clearing elements
• Cache locations identified, marked and documented with digital cameras or video
Obj RED
Obj GREEN
Rte PIG
DCP
2
Search element:
• All personnel on Obj RED secured and moved to DCP for screening and tactical questioning
• Documents, computers and other evidence collected on the objective secured and consolidated at the DCP
Obj WHITE

Figure 8–31: Gaining Intelligence

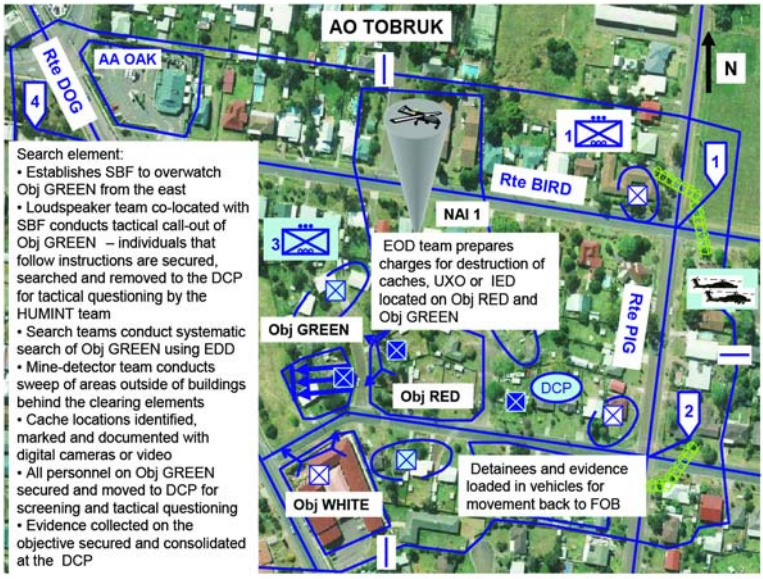
AO TOBRUK
AA OAK
Rte DOG
4
N
1
Rte BIRD
NAI 1
3
EOD team prepares charges for destruction of caches, UXO or IED located on Obj RED and Obj GREEN
Rte PIG
Obj GREEN
Obj RED
DCP
2
Detainees and evidence loaded in vehicles for movement back to FOB
Obj WHITE
Search element:
• Establishes SBF to overwatch Obj GREEN from the east
• Loudspeaker team co-located with SBF conducts tactical call-out of Obj GREEN – individuals that follow instructions are secured, searched and removed to the DCP for tactical questioning by the HUMINT team
• Search teams conduct systematic search of Obj GREEN using EDD
• Mine-detector team conducts sweep of areas outside of buildings behind the clearing elements
• Cache locations identified, marked and documented with digital cameras or video
• All personnel on Obj GREEN secured and moved to DCP for screening and tactical questioning
• Evidence collected on the objective secured and consolidated at the DCP

Figure 8–32: Support by Fire Positions

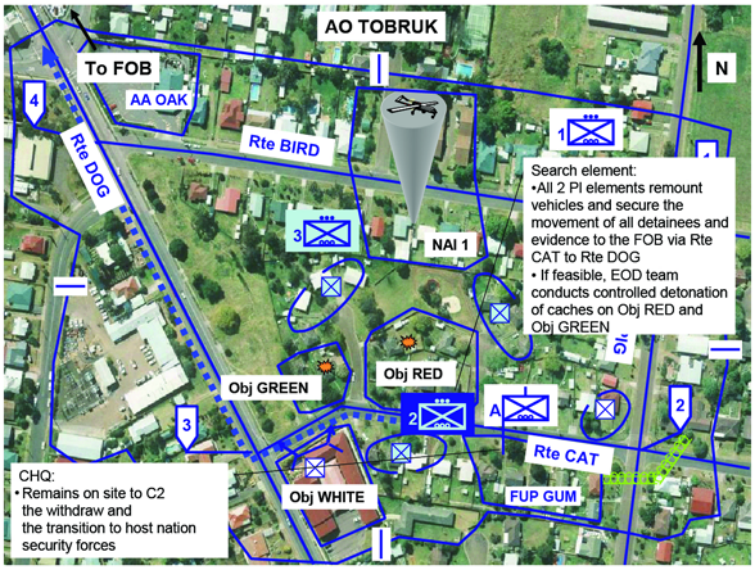
AO TOBRUK
To FOB
AA OAK
Rte DOG
Rte BIRD
N
Search element:
•All 2 PI elements remount vehicles and secure the movement of all detainees and evidence to the FOB via Rte CAT to Rte DOG
• If feasible, EOD team conducts controlled detonation of caches on Obj RED and Obj GREEN
NAI 1
Obj GREEN
Obj RED
Rte CAT
FUP GUM
Obj WHITE
CHQ:
• Remains on site to C2 the withdraw and the transition to host nation security forces

Figure 8–33: Coordination of Withdrawal and Transition

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